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ECONOMIC STATUS AND THE HAEMOGLOBIN LEVEL OF CHILDREN OF MEN IN THE FIGHTING SERVICES AND OF CIVILIANS

BY

HELEN M. M. MACKAY, M.D., F.R.C.P.
Member of the Staff of the Medical Research Council

LUCY WILLS, M.A., M.B., B.S.
Pathologist to the Royal Free Hospital

AND

KAITILIN BINGHAM
Assistant, Pathological Department, Royal Free Hospital

The Committee on Haemoglobin Surveys of the Medical Research Council (1945) has stated categorically that "it has been clearly shown in the past that haemoglobin levels vary with family income" (Spence, 1934; Fullerton, 1936; Ross and Summerfeldt, 1936; Reid and Mackintosh, 1937; McCance *et al.*, 1938; Yudkin, 1944a). The lower haemoglobin level associated with a lower economic status may have multiple causes, but McCance and his colleagues (1938) have demonstrated a close correlation between income, adequacy of the diet, and haemoglobin level.

The object of this investigation was, first, to compare the haemoglobin level of children of men in the Forces and of civilians; and, secondly, to study whether the composition of the household or evacuation of the children affected this level.

Clinical Material and Technique

Just under 500 children, aged 4 to 14, were examined in December, 1944, at a county council school in an urban district in Surrey. This school was chosen because, being near a military depot, nearly half of the pupils were children of men in the Forces. The teachers recorded for us on each child's card the parents' occupations, the composition of the household, the total number of siblings, with information as to evacuation and the consumption of dinners or milk in school. There were 264 children of civilians among the 493 examined. Their fathers' occupations are shown in Table I. About 65% of the total were in one or other of the following categories: artisan, male nurse, general or agricultural labourer. Many of the mothers were working outside their own homes, and some were in full-time employment—for example, as nurses in the neighbouring mental hospital. The investigation was originally planned for the spring of 1944, but had to be postponed until the end of the year on account of the flying-bomb attacks and evacuation of children, so that when the examination was carried out many of the children had recently returned from evacuation.

TABLE I.—*Occupations of the Fathers in Civilian Employment*

Occupation	No.	Per cent.
Artisans (including mechanics)	64	24
Male nurses	38	14
Labourers:		
General	38	14
Agricultural and gardeners	34	13
Civil Defence, National Fire Service, police, and postmen	31	12
Clerical workers	24	9
Retail salesmen	18	7
Administrative workers and farmers	4	2
Unknown	13	5
Total	264	

Estimations were made by the Haldane method, and figures are given with the National Physical Laboratory B.S.I. corrections applied for colour tubes and pipettes, together with a mean correction for the diluting tubes. Each observer used 8 diluting tubes in strict rotation, and the N.P.L. corrections for each group of 8 were almost identical with each of the other two groups. The maximum individual correction on any one diluting tube neglected by using a mean correction was −0.9 at 80%. The children were grouped by age, and each observer estimated approximately one-third of the children of each year of age. Each child warmed a hand in hot water just before the estimation and the blood was taken from a prick in the thumb.

Difference in Colour-matching Between the Three Observers

Three colour tubes were used in this survey—one by each observer. It was found that K. B. fairly consistently matched at a lower level, L. W. at an intermediate level, and H. M. M. M. at a higher level (see Table II). L. W.'s mean and H. M. M. M.'s mean were higher by 3.0 and 5.1 respectively than K. B.'s. When the differences between the mean values of the three observers in December, 1944 (present survey), were compared with the differences between the means of the same three observers in the summer of 1943 (Committee on Haemoglobin Surveys, Medical Research Council, 1945, p. 67) it was found

TABLE II.—*Mean Haemoglobin Level at each Year of Age: Results of Each Observer*

Age in Years	Mean Haemoglobin Level							
	All Observers		K. B.		L. W.		H. M. M. M.	
	Hb	No.	Hb	No.	Hb	No.	Hb	No.
4	82·0	4	81·6	1	81·6	2	83·3	1
5	85·4	42	82·5	12	84·4	16	89·1	14
6	87·2	60	85·7	22	88·6	18	87·5	20
7	87·6	66	88·2	21	85·3	23	89·5	22
8	88·3	48	84·7	18	89·1	18	92·6	12
9	87·5	59	84·1	20	87·3	17	90·8	22
10	90·4	42	87·8	13	89·4	13	93·3	16
11	88·3	59	85·8	19	88·2	20	90·6	20
12	91·1	47	87·6	16	91·4	17	94·7	14
13	91·9	58	89·6	20	90·7	21	96·5	17
4–13			86·2	162	89·2	165	91·3	158

that though the difference in colour-matching between H. M. M. M. and L. W. had remained approximately unchanged, the difference between K. B. and the other two observers had increased. It seems probable that this was in part due to the actual colour tubes used, in spite of the fact that the N.P.L. correction was applied in each case; for in yet another investigation carried out by H. M. M. M. and K. B., when one and the same colour tube was regularly used by both observers, it was found that the difference in colour-matching between these two was only about 1% as late as the summer of 1945. The differences in colour-matching of the observers in the present survey are taken into account in the analysis of the figures.

Analysis of Results

Haemoglobin Level in Relation to Age.—The mean haemoglobin level was 85.4 at 5 years of age, and there was a steady rise to 91.9 at 13 years (Table III). At 7 to 11 years the values

TABLE III.—*Mean Haemoglobin Level by Age: "Forces Children" and "Civilian Children" in Present Series Compared with Other Series*

Age in Years	Present Series, 1944						Series of 1942–3		M.R.C. Survey, 1943			
	All Children		"Forces Children"		"Civilian Children"		Boys and Girls		Boys		Girls	
	Mean Hb	No.	Mean Hb	No.	Mean Hb	No.	Mean Hb	No.	Mean Hb	No.	Mean Hb	No.
4	82·0	4	82·0	4	—	—			83·9	74	86·0	41
5	85·4	42	84·5	18	86·0	23			89·4	32	92·7	41
6	87·2	60	86·4	35	88·1	24			91·8	45	93·4	48
7	87·6	66	86·2	34	89·1	32	87·8	76	90·3	37	92·2	46
8	88·3	48	87·7	23	89·2	23	88·4	126	92·0	104	92·8	89
9	87·5	59	86·8	30	88·0	28	89·8	119	91·4	94	90·8	70
10	90·4	42	90·5	13	90·4	24	92·1	105	91·0	123	93·6	76
11	88·3	59	89·6	17	87·6	39	91·6	49	92·7	128	93·0	94
12	91·1	47	90·5	18	91·4	29			94·6	136	93·5	144
13	91·9	58	92·2	13	91·8	42			97·1	223	94·3	134

are similar to or slightly lower than those obtained at two other county council schools in 1942 and 1943 by two of us with R. H. Dobbs (Dobbs *et al.*, 1944). At each age from 5 to 13 years they are slightly lower than those of the corresponding age groups in the Medical Research Council Haemoglobin Survey (1945) carried out in 1943. In view of the alteration in K.B.'s matching level in the present investigation, and the small numbers involved, it is possible that the real differences in haemoglobin level between the children examined in the Medical Research Council Survey and the present one were smaller than the figures suggest.

Effect of Evacuation on the Haemoglobin Level.—About half the children under 10 years old had been evacuated—the great majority privately, and many with their mothers. Nearly three out of four of the children aged 10 to 14 years had been evacuated, and of this evacuated group about one-third went with their teachers as a school unit. The duration of evacuation varied greatly, but children who had been evacuated with their teachers had for the most part remained away until shortly before the date of this investigation. Since the great majority of those evacuated with their teachers were 10 years of age and over, a simple comparison of mean haemoglobin values of those remaining at home or evacuated with the school is invalidated by the difference in age. For this reason the observed mean value of each group is compared with the expected mean, taking into account both the age composition of the group and the observer carrying out each estimation. The figures from which the expected mean has been calculated are given in Table II, which sets forth the observed mean haemoglobin value obtained by each observer at each age. The difference between the observed mean and the expected mean for children of all ages not evacuated, children privately evacuated, and children evacuated with their school was under 1% (Table IV).

TABLE IV.—*Mean Haemoglobin Level of Children who were Evacuated and of Children who Remained at Home*

	Not Evacuated	Privately Evacuated	Evacuated with Teacher
No. of children	187	188	62
Observed mean Hb	88·3	88·8	88·6
Expected mean Hb	87·7	89·7	89·0
Difference of observed from expected mean	+0·6	−0·9	−0·4

Effect on the Haemoglobin Level of Economic Status as indicated by Number of Wage-earners and Number of Dependent Children.—Under the existent conditions of shortage of man-power and shortage of housing there were in many households earners other than the parents, whose presence had an important bearing on the financial resources of the household. These earners might be older children, grandparents, aunts, cousins, etc. In order to obtain a comparison of haemoglobin levels of children in households with larger and smaller incomes per head as determined by the composition of the household, the children have been allocated to different subgroups. The first group was one in which the mean income per head was likely to be considerably above the average: in this group were placed children from households in which there were not more than two dependent children together with three or more wage-earners—e.g., the father, who might or might not be resident in the home; and two other wage-earners, one of whom might be the mother. The other subgroups consisted of children from households where there were no wage-earners other than the parents and where the dependent children numbered respectively (*a*) 1 or 2; (*b*) 3; and (*c*) 4 or more (Table V). Since some of the children did not fall into any of these subgroups the number shown in Table V falls short of the total examined. As before, the difference of each observed mean haemoglobin value from the expected mean has been calculated to allow

TABLE V.—*Relation of Mean Haemoglobin Level to the Composition of the Family*

	3 or more Earners		Parents only Wage-earners						
	1 or 2 Dependent Children		1 or 2 Dependent Children		3 Dependent Children		4 or more Dependent Children		
	Mean Hb (A)	No. of Children	Mean Hb (B)	No. of Children	Mean Hb (C)	No. of Children	Mean Hb (D)	No. of Children	(A) minus (D)
County council school, 1943:									
Mean observed haemoglobin	92·0	18	90·2	160	89·7	47	88·5	19	
Mean expected haemoglobin	90·3		89·9		90·4		90·2		
Observed less expected Hb	+1·7		+0·3		−0·7		−1·7		
Present series, 1944:									
(*a*) All available cases:									
Mean observed haemoglobin ..	91·1	46	88·9	186	87·5	70	86·3	65	
Mean expected haemoglobin ..	89·7		88·6		87·9		87·7		
Observed less expected Hb	+1·4		+0·3		−0·4		−1·4		2·8 ± 1·20
(*b*) 4–9 years old, inclusive:									
Mean observed haemoglobin ..	90·4	17	87·8	123	86·7	40	84·8	47	
Mean expected haemoglobin ..	87·2		87·5		86·5		86·9		
Observed less expected Hb	+3·2		+0·3		+0·2		−2·1		5·3 ± 1·75
(*c*) "Forces children":									
Mean observed haemoglobin ..	90·9	13	87·9	85	87·0	29	85·4	34	
Mean expected haemoglobin ..	89·1		87·4		87·6		87·5		
Observed less expected Hb	+1·8		+0·5		−0·6		−2·1		3·9 ± 1·69
(*d*) "Civilian children":									
Mean observed haemoglobin ..	91·9	29	89·8	92	88·0	36	87·2	30	
Mean expected haemoglobin ..	90·0		88·8		88·1		87·9		
Observed less expected Hb	+1·9		+1·0		−0·1		−0·7		2·6 ± 1·58

both for the effect of age and for the differing levels of colour-matching of the three observers. Table V shows the results.

There is a progressive fall in the observed mean haemoglobin level between the first subgroup and the last. Moreover, the differences between the expected means and the observed means also fall into sequence. Children of households with three or more earners and only one or two dependent children have the highest mean haemoglobin (1.4 over the expected mean); the children of households where the parents are the only earners and there are four or more dependent children have the lowest mean haemoglobin (1.4 under the expected mean); and those children whose parents have one and two or three dependent children are intermediate in the series. As evacuation was likely to have smoothed out differences due to differing home circumstances, Table V shows also results when the children of 10 years old and upwards (three-quarters of whom had been evacuated) are excluded. This smaller group shows a greater difference between the various subsections: 3.2 over the expected mean for the first subsection, and 2.1 under the expected mean for the last, or a difference of 5.3 between children living in the better-to-do households and those in families with four or more dependent children. Two other groupings are shown—children of Service men and children of civilians, with similar gradations in haemoglobin level. The unbroken sequences in haemoglobin level in all the different groupings of children shown in Table V are striking. In the last column of Table V are given the differences in mean haemoglobin level between the first subsections and the last—i.e., between the children of better-to-do households and those of families with four or more dependent children, in each series. The differences in the four series—(*a*), (*b*), (*c*), and (*d*)—vary between 5.3 and 2.6, and the first three are statistically significant. Thus in spite of the complicating factor of the evacuation, there is shown to be a strong correlation of haemoglobin level with the number of the dependent children. These findings tally closely with the results obtained at another county council school in 1943 (Dobbs, Mackay and Bingham, 1944) and correspond with Yudkin's findings (1944b) for elementary-school children in Cambridge.

Haemoglobin Level of Children of Men in H.M. Forces compared with that of Children of Civilians.—The mean haemoglobin level of children whose fathers were in the Forces was slightly lower than that of children of civilians at each year of age from 5 to 9 years inclusive (Table III). From 10 to 13 years there was no consistent difference, but from 10 years of age upwards nearly three out of every four children had been recently evacuated from their homes, so that differences in haemoglobin level due to their own home conditions would probably have been obliterated by evacuation. The difference between "Forces children" and "civilian children" shows itself in various groupings of the figures: (*a*) When the whole series are grouped by age it is apparent at each year of age up to 9 years (Table III). (*b*) When the series are grouped according to the observer estimating the haemoglobin it is apparent in each subgroup (Table VI). (*c*) If the children of civilians and of men in the Forces are separately grouped to show levels in households of three or more earners as well as in families of increasing numbers of children, the results are similar for "Forces children" and "civilian children," but in each subsection the children of Service men have a slightly lower mean haemoglobin level than the children of civilians (Table V). (*d*) When the individual values at different ages obtained for "Forces children" and "civilian children" are ranged in order to show their frequency distribution, the frequency of lower values is greater in each subsection of "Forces children" than in the corresponding subsection of "civilian children" (Table VII). Since in all these groupings or subdivisions the "Forces children" have a lower mean value it is certain that the difference is a real one and has not arisen by chance.

TABLE VI.—*Mean Haemoglobin Levels as obtained by Each of the Three Observers; "Forces Children" and "Civilian Children"*

Observer	All Children		"Forces Children"		"Civilian Children"	
	Mean Hb	No.	Mean Hb	No.	Mean hb	No.
K. B.	86·2	162	85·2	64	86·8	94
L. W.	89·2	163	87·2	74	91·0	86
H. M. M. M.	91·3	158	90·3	67	92·3	80

TABLE VII.—*Frequency Distribution of Haemoglobin Values of "Civilian Children" and of "Forces Children"*

Haemoglobin	3 or more Earners		Parents only Wage-earners					
	1 or 2 Dependent Children		1 or 2 Dependent Children		3 Dependent Children		4 or more Dependent Children	
	Civilian	Forces	Civilian	Forces	Civilian	Forces	Civilian	Forces
Under 71·0	1	—	—	1	1	—	—	1
71·0–75·9	—	—	1	2	2	—	1	3
76·0–80·9	1	—	8	4	1	2	3	3
81·0–85·9	4	3	16	25	7	12	9	12
86·0–90·9	5	4	28	27	13	8	10	8
91·0–95·9	11	4	26	13	11	6	5	5
96·0–100·9	3	2	8	11	2	1	1	2
101·0–105·9	3	—	5	2			1	
106·0–110·9	1	—						

Discussion

It is well known that the standard of living of children in the social class to which the children in this school belonged was much higher in 1944 than it was in the pre-war years, as a result of full employment and higher wages, together with some food priorities for school-children in wartime. Yet, even with this higher standard of living, families with only the parents earning were handicapped in health, as indicated by their lower mean haemoglobin level, when compared with children in households with three or more earners. This handicap increased with the number of dependent children in the family. There was a lowering of the mean haemoglobin level of the children in the larger families by 5% in comparison with children attending the same school but coming from families with more wage-earners and fewer dependent children (Table V). Moreover, in spite of progressive and much-needed improvements in the family allowances for men in the Forces, their children were still, at the end of 1944, handicapped as compared with "civilian" children, whether coming from small or large families. Though a 5% difference in mean haemoglobin level may seem small, yet, by analogy with younger children, we believe that a lowering of haemoglobin level in school-children by this amount is likely to result in a rise in morbidity rate (Mackay, Bingham, and Dobbs, awaiting publication), and this is the reason why a difference in haemoglobin level of this order is a matter of importance.

Since the country must continue to maintain a considerable standing Army as well as a Navy and an Air Force, it is essential that the nation should see that the service of men in the Forces is not performed at the expense of the well-being of their families.

Unless the problem of the economic handicap of large families can be solved at least to the extent of ensuring that an increase in the number of children does not mean an inadequate diet for the family, the birth rate, except among the improvident, is unlikely to rise.

Summary

A series of 493 children aged 4 to 14 years were examined in December, 1944, at a county council school in a town in Surrey. Previous evacuation of the children had little effect on the mean haemoglobin level. When the proportion of wage-earners in the household was high the mean haemoglobin level of the children was also relatively high; when the number of dependent children increased the haemoglobin dropped correspondingly: findings which confirm those of an investigation undertaken earlier in the war. Children of men in the fighting Services had a lower mean haemoglobin level than the children of civilians at all ages under 10 years, after which home influence on the haemoglobin level was masked by evacuation. There was a similar difference in haemoglobin level between "Forces children" and "civilian children" when results were analysed to show the effect of increasing numbers of dependent children. We have no evidence as to the optimum or normal mean haemoglobin level for school-children, but the lowered haemoglobin level in "Forces children" and among the

children belonging to larger families reflects, we believe, an inadequate standard of living among at least a proportion of those composing these groups.

Our grateful thanks are due to the teachers, particularly to the heads of the three sections of the school—Mr. J. A. Richardson, Mr. H. S. Jones, and Miss G. Ellis—for their generous co-operation in this investigation with all the extra work it threw upon them. We are indebted to the Medical Officer of Health for Surrey, Dr. J. Ferguson, for permission to carry out the work, to the medical students and others who gave up several days to assist us, and to Dr. W. J. Martin for advice on statistical methods.

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WEIL'S DISEASE

OCCURRENCE AMONG WORKERS IN WELSH AND SCOTTISH COAL-MINES

BY

T. H. JENKINS, M.B., B.S., B.Sc.

AND

Wm. C. SHARP, M.B., Ch.B., D.P.H.

Regional Mines Medical Officers in Wales and Scotland (Ministry of Fuel and Power)

During recent years numerous articles have been published on Weil's disease (synonyms—spirochaetal jaundice, acute infective jaundice, leptospiral jaundice, spirochaetosis icterohaemorrhagica, and possibly Nanukayami or 7-day fever of Japan, and slime fever of Eastern and Central Europe). The present paper is the result of inquiries conducted during the past few years into its incidence among mine workers in the Scottish and South Wales coalfields. Cases of Weil's disease among miners occurring during the past three years have been followed from mine to home or hospital into convalescence and return to work. During the past year a number of miners suffering from the disease have been treated with penicillin with most promising results. In this paper the incidence and prevention of the disease are dealt with, and the features referred to are mainly those peculiar or of special interest to coal-mining.

From April 1, 1940, infection by *Leptospira icterohaemorrhagiae* has been included, subject to special conditions, in the schedule of industrial diseases under the Workmen's Compensation Act. Since man is usually infected through the medium of water or slime in or from places infested by rats, such as mines, sewers, fish-cleaning premises, piggeries, farm middens, and slaughterhouses, and since infection may also occur from bathing in polluted water, no special process or work was included in the Order. It therefore rests with the worker to show that the disease was contracted in the course of his or her employment.

The disease has varied in name since it was first described. "Weil's disease" and "spirochaetal jaundice" remain in common usage although the Departmental Committee on Industrial Diseases recommended in its Third Report (1936) that these terms should not be used synonymously for infection by *L. icterohaemorrhagiae* on the grounds that the illness may not in all cases be due to infection by that particular organism and that infection may occur without producing jaundice.

The disease is notifiable in Scotland but not in England and Wales. In British coal-mining the main events in chronological order are as follows. 1923: Buchanan and Gullard recognized and established the occurrence of spirochaetal jaundice among East Lothian miners. 1924: Spirochaetal jaundice became notifiable as an infectious disease in Scotland. 1933: Attention of Mines Department first drawn to cases occurring among Welsh coal-miners. 1940: Scheduled as an industrial disease.

Incidence

The following figures and tables show the prominent part played by certain Scottish and Welsh coal-mines in the epidemiology of the disease.

Scotland.—According to the annual returns, the numbers of cases notified since 1924, when the disease became notifiable, are as follows:

1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944
19	52	27	73	33	21	67	22	34	23	32	24	57	41	48	25	25	33	50	45	57

The returns do not indicate the occupational groups affected, nor do they state whether the diagnosis was confirmed. In 1934 Smith (Aberdeen) introduced Schüffner's agglutination test, which is highly specific. The incidence of known confirmed cases among Scottish mine-workers is as follows:

Year	Fatal	Non-fatal	Year	Fatal	Non-fatal
1924	2	–	1942	2	15
1932	–	3	1943	3	3
1934	–	1	1944	1	–
1936–7	7	2	1945	2	–
1938	–	1		—	—
1939–41	5	3		22	30

South Wales.—Gardner* between 1939 and February, 1943, examined 385 sera from patients all over Great Britain suspected of suffering from Weil's disease. Altogether 58 cases gave positive reactions, and 21 of these were from South Wales (Carmarthen 4, Glamorgan 8, and Monmouthshire 3, mainly coal-miners). The following cases have been reported as occurring among mine-workers:

Year	Fatal	Non-fatal	Year	Fatal	Non-fatal
1933–5	1	4	1943	1	4
1937	1	5	1944	2	5
1939	1	2	1945	1	6
1940	–	2		—	—
1941	1	5		11	36
1942	3	3			

In all the cases noted above as occurring after 1935 the diagnosis was confirmed by serological and/or bacteriological examination. There is now a greater awareness of the disease, and since its inclusion in the industrial diseases in 1940 no case is certified unless confirmed by serological examination.

Mine-workers in Scotland and Wales formed a high proportion of the confirmed cases, fatal and non-fatal, occurring each year. These confirmed cases, Gardner states, may represent only a fraction of the infections actually occurring. Jaundice is usually present before the disease is suspected. According to Schüffner, jaundice is present in only 60% of cases. To quote Gardner: "It would be well if doctors dealing with patients exposed to the special risks by occupation or accident would have a serum test done in febrile cases developing headache, muscular pains, conjunctivitis, and intestinal irritation, without waiting for jaundice to develop."

In the table opposite the incidence in mines of known risk is listed together with certain pertinent data for each mine.

In Scotland and South Wales the mines concerned are drifts, levels, or slants, or if pits (i.e. having shafts) there are one or more connexions to slants. Each mine is known to have been infested with rats to varying degrees at the time of occurrence of the disease. The underground workings are wet over long portions, and collections of water (pools) are frequent. Horses or ponies are employed underground in all the Welsh mines concerned and in the two Scottish mines which show the highest incidence of cases. The regulations under the Coal Mines Act require in effect that horse-feed and water should be taken inbye when horses or ponies are employed underground.

All the recorded cases in mines occurred among underground workers except for one surface worker in Scotland who may have paid visits a little way inbye. Cases have occurred in practically all grades of underground employment.

Seasonal Incidence.—The numbers of cases recorded are insufficient for assessing a causal seasonal factor. There may be a slight relationship between the seasonal variation in the

* Bulletin of the Emergency Public Health Laboratory Service, May, 1943.

occurrence of the disease and the breeding of rats. If there is a seasonal influx of rats to mines with the onset of winter it would seem that certain conditions are required before clinically recognizable human infection can ordinarily occur, as most cases of infection appear from spring onwards.

Underground Environment

The mines of known risk are what are commonly called day drifts, slants, or levels, and lead direct from the surface into the mine workings. The actual coal face may be from 800 to 3,000 yards or more inbye. Double partings, or passbyes, are formed at convenient points inbye, and serve as distributing and collecting centres. Horses or ponies bring along the coal-tubs from the working face to the double parting, where a journey, or rake of full tubs, is formed and brought to the surface by rope haulage. Many mines have replaced horse-drawn traffic by subsidiary rope haulages. Stables are generally maintained underground.

Water from the surface, underground streams, or old workings forms scattered pools along the roadways and workings. Gutters or channels are made along the side of the levels or slants, and the water is thus directed to a central sump or reservoir, from which it is pumped to the surface. It is, however, often impossible to prevent shallow pools forming in the depressions and undulations along the mine roadways. Water is thus splashed about the sides of the roadway during the passage of horse-drawn traffic and men. Slime and fungal growths in which the organism has been cultivated are often seen on the roof and timber supports. Water droppings from the roof are frequent. Under very wet conditions the men may wear oilskins and gum-boots but dispense with them in the drier parts of the mine.

Weil's Disease in Mines of Known Risk

Mine	No. of Men Employed		Incidence of Weil's Disease			Type of Access; Depth of Cover (Yards)	Horses		Stables		Surface Environment	Nature of Underground Workings	Rats Infected
	Surface	Underground	Year	Fatal	Non-fatal		Underground	Surface	Underground	Surface			
						Scotland							
1	123	414	1924	2	—	Shaft and slants (160)	No	No	No	No	Cultivated	Wet	Yes
			1940	—	3								
			1942	—	1								
2	43	117	1936	—	1	Slant and airway (86)	,,	,,	,,	,,	,,	Roads wet; faces dry	,,
3	106	380	1936–7	7 (proved) 13 (reported)		Shaft and slant (200)	Yes	,,	Yes	,,	Woodland	Mostly very wet	,,
			1942	2	6								
4	20	120	1933	—	3	Shaft with adit to riverside	,,	,,	,,	,,	Cultivated	Roads damp; faces wet	,,
			1934	—	1								
			1939	—	1								
			1941	—	1								
			1942	—	6								
			1943	1	1								
			1944	—	—								
5	30	130	1939	—	1	Slants (400)	No	,,	No	,,	,,	Wet throughout	,,
			1939–41	4	1								
			1941	—	2								
6	17	45	1938	—	1	Slant (90)	,,	,,	,,	,,	Cultivated orchard	Roads wet; faces dry	,,
7	117	255	1943	1	—	Slant	,,	,,	,,	,,	Mainly grazing	Wet	,,
8	38	465	1943	—	1	Slant and shaft	,,	,,	,,	,,	Grazing	,,	Not examined
			1945	1	1								
9	54	251	1941	1	—	Slant	,,	,,	,,	,,	Moorland	,,	Yes
10	80	290	1943	1	—	,,	,,	,,	,,	,,	,,	,,	Not examined
11	10	90	1943	—	1	,,	,,	,,	,,	,,	Cultivated	Very wet	Result not known
12	45	219	1944	1	—	,,	,,	,,	,,	,,	Moorland	Faces and roads very wet	Yes
13	44	131	1945	—	1	,,	,,	,,	,,	,,	Edge of town	Mainly wet	,,
14	168	666	1945	—	1	Shaft and slant	,,	,,	,,	,,	Cultivated	Moderate; some roof water	Not examined
15	27	77	1945	1	—	Slant	,,	,,	,,	,,	,,	Very wet and muddy	Yes
						South Wales							
1	112	441	1940	—	1	Slant (350–600)	Yes	No	Yes	No	River-rat-infested; sheep farm	1 seam partly wet	Not examined
			1941	—	1								
2	24	97	1939	1	2	Level (45)	,,	,,	No	Yes	Brooks near	Mainly wet	,,
			1933	1	4	,, (170)	,,	Yes	Yes	,,	Two streams near by each entrance	Generally damp; some wet	,,
3	54	242	1941	—	1								
			1944	1	—								
4	16	498	1937	—	3	Slant (100)	,,	,,	No	,,	Brook near entrance	3 seams: 1 damp, 1 wet, 1 dry	Yes
			1943	1	—								
5	136	453	1941	1*	—	,, (350)	,,	No	Yes	,,	River near entrance	Generally dry	Not examined
6	79	426	1940	—	1	,, (450)	,,	,,	No	,,	Streams near by	Faces wet and dry; pools in roads	,,
			1945	—	1								
7	93	330	1937	—	1	,, (450)	,,	,,	,,	,,	Streams near	Some faces wet	,,
8	47	181	1944	—	4	,, (100–500)	,,	Yes	,,	,,	River intersecting small-holdings	Faces dry; levels wet; pools in roadway	Yes
			1941	1	—	Drift (70)	,,	No	,,	,,	Small farms and streams	Wet	,,
9	119	543	1942	1	—								
			1943	—	1								
			1945	—	1								
			1941	1	—	,, (170)	,,	,,	Yes	No	,, ,,	,,	,,
10	48	278	1942	1	1								
			1943	—	1								
			1941	—	1	Shaft and level (150)	,,	,,	,,	,,	Farms and streams	,,	Not examined
11	124	650	1943	—	1								
			1945	1	1								
12	6	95	1942	1	—	Level and slant (180)	,,	,,	No	Yes	Farms	Not wet	,,
			1945	—	1								
13	16	107	1943	—	1	— (60)	,,	,,	,,	,,	Moorland	Extremely wet	,,
14	14	62	1942	—	1	Level (150)	,,	,,	,,	,,	Small stream	Damp throughout	,,
15	32	578	1944	1	—	Slant intersected with shaft and drainage level (300)	,,	Yes	Yes	,,	Grassland	Moderately damp; wet for first 800 yards	,,
16	26	568	1944	—	1	Slant (400)	,,	,,	,,	,,	Farms; brook runs through colliery surface	Wet in parts	,,
17	3	24	1944	—	1	,, (100)	,,	No	,,	No	Cultivated	Wet	,,

* An ostler who worked in the underground stables.

The day's stock of horse-feed is sent down in sacks to the feeding-points, usually at or near the double partings, where it is emptied into large bowls. Practice, however, varies, and the horses may feed from nose-bags. Spillage is common, and it is usual to find the greatest number of "worked holes," and thus rats, near the feeding-points. Cuts and minor abrasions are a fairly common occurrence underground. Prompt first-aid attention is generally available if required.

There is extensive cover available underground for rats in the goafs (gobs and wastes). The only limiting factors in the distribution of rats in mines are deficiencies in food supply, movement of traffic, and the coal face itself. It appears that rats are attracted to the mine by the horse-feed. The slant or level provides easy access. The extensive cover, mine temperature, wetness, and darkness provide a favourable environment.

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The main carrier of the *Leptospira* is the sewer-rat, *Rattus norvegicus*, and, far less commonly, the black rat, *Rattus rattus*.

Fecundity.—The female is fertile at three months. Oestrus, which lasts for three weeks, occurs every six weeks. Gestation lasts about 22 days. In a year six to eight litters are normally produced. The maximum life of the rat is about two years. A single pair of rats may in one year give rise to progeny numbering 600 or more. Rats are cannibals, and mortality among them is very high.

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Distribution of Rats in Mines.—There is little agreement regarding migration of rats into or from the mines. Some observers state that the rat colonies apparent underground maintain fairly level numbers and that migration is not noticeable. Others take the view that there is migration to the mines with the onset of winter, particularly if they are convenient to rivers, canals, or other waterways. The rats gain access to the mine workings by slants or slopes (surface mines) or via horse-feed. Horse-feed and scraps of bread thrown away by workers are the main sources of food for rats. Men generally carry their food in tin containers, but the practice is not entirely a universal one; even if it were it is often discounted by the unfortunate habit of throwing crusts and other scraps of food away. Human and horse excreta may also form part of the rat diet. Traces of rats in mines are somewhat different from those found in surface buildings or in the open. Often everything is wet and there are no smears. Droppings are often rapidly covered and obscured in the main roadways, and in disused roads are soon coated with fungal growth. Used rat places are polished and worn. These are the main traces. It is said that rats and mice do not coexist in the mine, although exceptions are instanced. It has also been recorded that in a mine where the only access was via the shaft the rats soon exterminated themselves when horses were replaced underground by mechanical haulage.

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The prevention of Weil's disease in mines of known risk requires the co-operation of the men and the management. Some of the preventive measures are of a specialized nature and will be referred to only briefly. We are of the opinion that the first measures should be: (1) extermination of rats; (2) prevention of reinfestation; (3) rendering all food inaccessible. Further measures to implement the above are: (4) drainage of water and/or rendering stagnant pools unsuitable fo the organisms; (5) use of protective clothing; (6) prompt and effective use of first-aid arrangements; (7) pit-head baths.

1. *Extermination of Rats.*—This requires to be intensive, and for this purpose the surface and underground workings should be considered as a single entity. In 1944 the Rat Infestation Branch of the Ministry of Food undertook, with a high degree of success, the extermination of rats in one of the Welsh mines of known risk. Similar treatment of a Scottish mine took place in 1945. This occasion was correlated to extensive surface measures. It is estimated that the rats killed on this occasion numbered: surface, 315; underground, 215. The measure adopted is briefly:

A plan of the mine is inspected and a thorough survey for traces of rats made. The mine is divided into appropriate working sections. A system of pre-baiting with poisoned baits (arsenic or barium carbonate) and post-baiting is adopted. A test for reinfestation is made a month later. Where sections are continuous, special treatment of the overlapping area is called for. Full details of the planning, standard procedure, organization of the squads, and safety precautions are contained in the memorandum on Instructions in Poisoning Rats in Pits and Levels, issued by the Rat Infestation Branch of the Ministry of Food.

In one mine the manager reports that during a holiday period a few years ago, when horses were all taken to the surface, poisoned biscuits were laid down intensively, with good results. No rats have since been seen. At two mines the use of horses underground was discontinued. Rats, formerly rampant, ceased to be noticed anywhere underground within a few months and had not reappeared. This was attributed to starvation plus cannibalism. Even if these reports should be accurate it does not necessarily follow that haphazard methods are as efficient as carefully controlled methods.

2. *Prevention of Reinfestation.*—The proofing of main levels or drifts against rat movement is virtually impossible owing to the requirements of haulage traffic. Old roadways and airways may be effectively sealed against rats by suitable doors, which may be solid or of suitable stout mesh construction. This would depend on the requirements of ventilation. These physical deterrents, however, will not suffice where food is made available underground.

3. *Rendering Food Sources Inaccessible.*—(*a*) Horse-feed: Underground storage should be in steel bins with close-fitting lids. One mine has for this purpose a brick cabin with concrete floor and an accurately fitting door of steel plate. The regulations under the Coal Mines Act require in effect that horse-feed should be taken inbye where horses are employed. As stated previously, the replacement of horse traffic by mechanical haulage results in marked diminution in the rats seen. (*b*) Workmen should all carry food in metal boxes and should desist from throwing away crusts. (*c*) Full use of chemical conveniences, and their importance, should be stressed. (*d*) Restriction of the number of horse-feeding points would simplify the disposal of horse excreta.

4. *Drainage of Water and/or Chemical Treatment of Stagnant Pools.*—Where there is a definite incline drainage by narrow channels to lodgments is to be commended. From these lodgments there should be ultimate pumping to the surface. Level or undulating conditions tend to promote areas of stagnant water. Where such pools are unavoidable, acidification of the water will produce conditions inimical to the viability of the organism. Scottish authorities have recommended the liberal application of lime and/or chloros to roadways, etc., and are of the opinion that this gives satisfactory results. It is difficult to determine just how accurately the treatment is pursued and therefore to what extent it is effective. As in the case of horse-feed, water for horses or for any other purposes requires to be protected adequately from contamination.

5. *Protective Clothing.*—The main practical measure in this regard is the use of gum-boots. This is particularly important where, as often happens in wet mines, workers may be exposed to prolonged or repeated wettings in traversing certain stretches of roadways. In some cases gum-boots are worn to get through such places, and under drier conditions at the coal face the worker changes to ordinary boots.

6. *First-aid Measures.*—Where there is a known risk first-aid treatment should be given for even minor scratches and abrasions. In two recent cases there was a history of a cut on the hand (7 and 14 days respectively) before the onset of symptoms of Weil's disease. In both cases some time had elapsed before the wound received attention. It is believed that these wounds provided the means of entry of the organism.

7. *Pit-head Baths.*—These provide a general hygienic measure, and their use should be encouraged to the fullest extent. Although baths have been provided at a great many collieries for some years now, a few men do not use them. As a further

measure the washing of hands before eating should be urged. This does not seem easily feasible in the case of underground workers, but it ought not to be impossible.

Present Position and Observations

In general the occurrence of Weil's disease is for all practical purposes confined to mines which have direct access from the surface by levels, drifts, or slants, which are generally wet, and which are infested with rats. In South Wales horses are employed and feed is taken inbye in all cases. In Scotland horses are in use in only two of the mines concerned, but these two have the highest incidence of infection continuous over a period of years. The geographical distribution of cases is widespread in both regions, and several recent cases occurring at mines widely separated were the first to be recorded among miners in these areas. Most Scottish cases have, however, occurred within a comparatively small area. Within this same area there are several mines each employing some hundreds of men below ground—mines which have horses with stables below ground and are known to be rat-infested, but which to date are not known to have had a recorded case of Weil's disease.

The occurrence of a case, particularly of a fatal one, usually leads to intensive rat-extermination measures being undertaken for a time at least. This no doubt partly accounts for the sporadic nature of the incidence. The recent success of the Rat Infestation Branches of the Ministry of Food and of the Department of Agriculture in Scotland suggests that much can be done in rat extermination, but any underground efforts in this respect require to be co-ordinated with extensive surface measures. Periods when horses are withdrawn to the surface would seem to be the most suitable, since food for rats will then be at a minimum and poisoned bait will be more likely to be taken. The probability is that the disease is much more widespread than recorded cases indicate. It is rarely diagnosed without jaundice having appeared, and the high rate of mortality justifies the most energetic measures that can be taken to clear mines of rats and keep them clear. In South Wales intensive measures are being undertaken at the mines of known risk. From each of the mines concerned one or two men were selected to undertake a course in the methods of rat extermination adopted by the Ministry of Food. It is hoped that this will result in a marked diminution in the appearance of new cases of Weil's disease.

Certain questions remain unanswered. Among these are: What conditions favour increased virulence or attenuation of the organism? What is the viability of the organism in pit water and slime? Are rats infected *de novo* from such water and slime, or directly or indirectly from other rats? Is there a proper seasonal variation in the incidence or is it related to breeding?

All but one of the cases recorded were among underground workers. In nearly all of them the conditions of work were wet or necessitated traversing wet places. Cuts and abrasions are commoner underground and so facilitate the entry of the organism into the body; moreover, first-aid attention is more difficult than at the surface.

Glossary of Mining Terms

Coal face: The place where coal is hewn and filled.

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Slant, slope: See Drift.

Summary

Cases of leptospiral jaundice occur among Scottish and South Wales mine-workers with such regularity and such a high mortality rate as to make the disease a definite occupational risk in certain types of mines.

The mines known to be concerned are all wet and infested with rats, and form a small proportion of the number of colliery undertakings in both regions. Rats gain access to the workings via levels, drifts, or slants, and possibly with horse-feed in course of transit.

In most cases live rats caught in the mines have been proved to harbour the Leptospira, which has also been isolated from specimens of pit water and slime.

Unless circumstances provide a guide there is every possibility that the disease may be mistaken for other conditions, particularly in the early stages. Proof is by positive agglutination reactions in ascending titres.

Facilities for laboratory diagnosis and hospital treatment are available and adequate in both the Scottish and the South Wales coalfields.

Approximately 33% of the recorded cases were fatal. Two to three months is the usual period of illness. One attack confers immunity.

Determined efforts at rat extermination are of primary importance, and should be so co-ordinated as to deal with surface and underground problems simultaneously.

We are grateful to many persons and bodies whose kind co-operation and advice have greatly facilitated the investigation and the compilation of this report. In particular we would mention Dr. S. W. Fisher, Chief Mines Medical Officer, who initiated the investigation and helped us in our labours throughout. We are also indebted to the Mines Inspectorate and to the Rat Infestation Branches of the Ministry of Food and of the Department of Agriculture for Scotland for guidance on the environmental aspects. Our thanks are again due to several medical officers in our respective regions for the notification of cases and advice on the medical aspects of the disease.

INSULIN SHOCK TREATMENT OF BRONCHIAL ASTHMA

BY

Z. GODLOWSKI, M.D.

Physiopathology Department of the Polish Medical School and Paderewski Memorial Hospital, Edinburgh

Insulin shock was first introduced into the treatment of bronchial asthma by Wegierko in 1935; his later report on this subject (Wegierko, 1937) revealed very promising results, as he was able to remove the symptoms of asthma permanently or to mitigate them considerably for many months or even years. He thought (Wegierko, 1937) that the mechanism of insulin shock in the treatment of bronchial asthma lay in a violent stimulation of the whole vagal system, leading consequently to relaxation of the total smooth musculature of the body, including the spasmodically contracted bronchioles in these cases. He thus recommended insulin shock treatment for all conditions connected with spasmodic pains, such as nephrolithiasis, cholelithiasis, migraine, etc. He based his explanation on the fact that, in his observations, some of the cases in the early stages of insulin shock showed a slight fall of blood pressure, bradycardia, hot flushes, etc.—all symptoms described as due to vagal irritation; in the same stage of insulin shock patients began to feel a notable relief of breathlessness. It should, however, be borne in mind that the vagal fibres of the bronchial plexus bring to the bronchial muscles a constrictory stimulus. Thus either the toxic doses of insulin produce a paralysing effect on the vagal system and thus cause relaxation of the bronchial muscles (but in that case cannot develop vagal symptoms), or insulin shock transiently stimulates the vagus nerve but the agent causing the relaxation of the bronchial spasm is not directly dependent on the insulin action.

On the other hand, physiologists have clearly proved, by numerous experiments on cats (Cannon *et al.*, 1924; Elaut, 1929), rabbits (Langecker, 1928), dogs (Tscherboksaroff and Malkin, 1925), mice (Elaut, 1929), and pigeons (Riddle *et al.*, 1924), that insulin shock unmistakably caused a higher production of adrenaline, found either in the blood by biological assessments (Cannon *et al.*, 1924; Tscherboksaroff and Malkin, 1925) or in the adrenal medullas by histochemical or histological investigations (Langecker, 1928; Elaut, 1929). The hyperproduction and increased dissipation of the adrenaline in those cases is a sort of regulative measure of the organism, preventing or diminishing the toxic effects of massive doses of insulin. Bearing these facts in mind, I began to apply insulin shock in cases of bronchial asthma. As the physiologists' explanation of the insulin shock action seems to be more plausible—although not yet proved in human clinics—than the original one suggested by Wegierko (1937), only those cases of bronchial asthma with an allergic aetiology were considered to be suitable for this treatment. A no less important problem

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There is extensive cover available underground for rats in the goafs (gobs and wastes). The only limiting factors in the distribution of rats in mines are deficiencies in food supply, movement of traffic, and the coal face itself. It appears that rats are attracted to the mine by the horse-feed. The slant or level provides easy access. The extensive cover, mine temperature, wetness, and darkness provide a favourable environment.

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In most cases live rats caught in the mines have been proved to harbour the Leptospira, which has also been isolated from specimens of pit water and slime.

Unless circumstances provide a guide there is every possibility that the disease may be mistaken for other conditions, particularly in the early stages. Proof is by positive agglutination reactions in ascending titres.

Facilities for laboratory diagnosis and hospital treatment are available and adequate in both the Scottish and the South Wales coalfields.

Approximately 33% of the recorded cases were fatal. Two to three months is the usual period of illness. One attack confers immunity.

Determined efforts at rat extermination are of primary importance, and should be so co-ordinated as to deal with surface and underground problems simultaneously.

We are grateful to many persons and bodies whose kind co-operation and advice have greatly facilitated the investigation and the compilation of this report. In particular we would mention Dr. S. W. Fisher, Chief Mines Medical Officer, who initiated the investigation and helped us in our labours throughout. We are also indebted to the Mines Inspectorate and to the Rat Infestation Branches of the Ministry of Food and of the Department of Agriculture for Scotland for guidance on the environmental aspects. Our thanks are again due to several medical officers in our respective regions for the notification of cases and advice on the medical aspects of the disease.

INSULIN SHOCK TREATMENT OF BRONCHIAL ASTHMA

BY

Z. GODLOWSKI, M.D.

Physiopathology Department of the Polish Medical School and Paderewski Memorial Hospital, Edinburgh

Insulin shock was first introduced into the treatment of bronchial asthma by Wegierko in 1935; his later report on this subject (Wegierko, 1937) revealed very promising results, as he was able to remove the symptoms of asthma permanently or to mitigate them considerably for many months or even years. He thought (Wegierko, 1937) that the mechanism of insulin shock in the treatment of bronchial asthma lay in a violent stimulation of the whole vagal system, leading consequently to relaxation of the total smooth musculature of the body, including the spasmodically contracted bronchioles in these cases. He thus recommended insulin shock treatment for all conditions connected with spasmodic pains, such as nephrolithiasis, cholelithiasis, migraine, etc. He based his explanation on the fact that, in his observations, some of the cases in the early stages of insulin shock showed a slight fall of blood pressure, bradycardia, hot flushes, etc.—all symptoms described as due to vagal irritation; in the same stage of insulin shock patients began to feel a notable relief of breathlessness. It should, however, be borne in mind that the vagal fibres of the bronchial plexus bring to the bronchial muscles a constrictory stimulus. Thus either the toxic doses of insulin produce a paralysing effect on the vagal system and thus cause relaxation of the bronchial muscles (but in that case cannot develop vagal symptoms), or insulin shock transiently stimulates the vagus nerve but the agent causing the relaxation of the bronchial spasm is not directly dependent on the insulin action.

On the other hand, physiologists have clearly proved, by numerous experiments on cats (Cannon *et al.*, 1924; Elaut, 1929), rabbits (Langecker, 1928), dogs (Tscherboksaroff and Malkin, 1925), mice (Elaut, 1929), and pigeons (Riddle *et al.*, 1924), that insulin shock unmistakably caused a higher production of adrenaline, found either in the blood by biological assessments (Cannon *et al.*, 1924; Tscherboksaroff and Malkin, 1925) or in the adrenal medullas by histochemical or histological investigations (Langecker, 1928; Elaut, 1929). The hyperproduction and increased dissipation of the adrenaline in those cases is a sort of regulative measure of the organism, preventing or diminishing the toxic effects of massive doses of insulin. Bearing these facts in mind, I began to apply insulin shock in cases of bronchial asthma. As the physiologists' explanation of the insulin shock action seems to be more plausible—although not yet proved in human clinics—than the original one suggested by Wegierko (1937), only those cases of bronchial asthma with an allergic aetiology were considered to be suitable for this treatment. A no less important problem

is to exclude from insulin shock treatment all types of arterial hypertension, acute and chronic failure of the circulation, and cases with even a slight impairment of carbohydrate metabolism: a more detailed account of this question will be found in the "Discussion."

Methods

Before the patients were submitted to insulin shock treatment they were subjected to the following preliminary investigations after a routine general examination:

(1) A detailed personal as well as family history of the case was drawn up, with particular stress on the elucidation of the allergic conditions.

(2) Examination of the circulatory system by: (*a*) electrocardiogram; (*b*) *x*-rays of the chest; (*c*) repeated control of blood pressure.

(3) Blood examined by film and for the leucocyte count; B.S.R.; and glucose-tolerance test.

(4) Sputum examined by culture and for eosinophilia.

(5) Stool examined for parasites.

(6) E.N.T. control of the nasopharyngeal region and, if necessary, local treatment.

Insulin Shock.—At 8 a.m. 20 units of soluble insulin were injected hypodermically or intravenously for the first shock. The following doses of insulin were higher by 5 or 10 units; but in cases showing a violent reaction to the first dose only an equal amount of insulin was repeated; the insulin shocks were usually repeated twice weekly; sometimes, however, in the early stages of treatment they were given three times a week. The individual insulin shock usually lasted three hours and ended in self-recovery or was arrested by the injection of 50 ml. of 20% glucose solution (only if the patient lost consciousness) or by oral administration of 300 ml. of 10% glucose solution. During the whole period of shock the following controls were carried out: (1) the blood sugar was estimated every half-hour—if necessary, also immediately before the arrest of the shock; (2) the blood pressure was measured every 10 minutes—if necessary more often; (3) somatic and mental symptoms were controlled every half-hour.

It is sometimes very difficult to decide whether the treatment is complete or not; discontinuation of the attacks or of permanent breathlessness is, of course, the best criterion in this respect. In practice, however, there is sometimes a recurrence of breathlessness, and in such cases one or two additional shocks have to be given.

Results

Eight cases of severe allergic type and 3 of non-allergic bronchial asthma lasting from a few weeks to a few years, treated previously by various generally known therapeutical methods without any obvious results, were subjected to insulin shock treatment. Particulars as to age, sex, and number of shocks given are shown in the accompanying table. The courses of treatment varied from 6 to 9 weeks. The lowest glycaemia (18 mg. per 100 ml., Case 6) was found during a shock when 70 units were injected. It is worth mentioning that in the same case the blood sugar during the next insulin shock, when 80 units were injected, was only 24 mg. per 100 ml. In both cases the patient became unconscious several times, but only for a very short period, recovering by himself. He, however, developed a slight tremor, but predominant symptoms were those of the emotional reactions, such as crying, anger, quarrelsomeness, etc.

In all 11 cases the blood pressure rose regularly about 15 to 70 mm. Hg above the initial level, usually at the end of the first hour of insulin shock, but this elevation never lasted longer than two hours after the blood sugar had regained the normal limits (Valis, 1945). After the treatment eosinophilia in 7 cases out of 8 dropped 10% to 60% of its initial value. I consider this symptom of great importance, since the diagnosis of an allergic cause of bronchial asthma was based almost entirely on it (Ratner, 1943), apart from the local findings of the mucosa of the nasopharyngeal region or skin changes typical of an allergic state.

Improvement in the asthmatic condition varied so much from case to case that it seems impossible to make any classification in this respect. The only feature common to almost all cases was a subjective feeling of relief of breathlessness during the shock itself, even although typical symptoms of bronchial asthma were still present; in such cases dyspnoea usually returned in a few hours. In 7 cases out of 8 complete recovery from symptoms occurred without any regularity; in each of the above-mentioned cases, when the stage of clinical recovery was reached, two additional insulin shocks were given as a matter of routine. So far the complete subsidence of asthmatic phenomena has in 7 cases lasted from 8 months to 2½ years—i.e., from their discharge from hospital up to the present time. Case No. 8 was thoroughly free of symptoms for 5 months, but recently again developed some breathlessness of asthmatic type. Although at the time of his discharge from hospital he was without any asthmatic symptoms the eosinophilia remained at its initial level; in view of this fact one might accept the fluctuation of the eosinophilia as a good criterion of the response to insulin shock, and as an indication whether or not the treatment has to be discontinued.

The 3 cases of non-allergic bronchial asthma showed no improvement whatsoever, although during the shocks each felt a transitory respite from breathlessness. In all 11 cases the blood sugar remained within normal limits after the treatment was completed.

Discussion

From the previously quoted data it becomes clear that only allergic bronchial asthma should be selected for insulin shock treatment. Since, during the shock, allergic and non-allergic cases showed a conspicuous rise in blood pressure, it seems easier to accept the physiologists' conception of the insulin shock mechanism. Thus artificially stimulated suprarenal medullas dissipate more adrenaline to the peripheral blood, causing the well-known symptom of relaxation of the smooth muscles of the bronchioles, but at the same time giving a stimulus to the peripheral circulation which produces a transitory rise in blood pressure. To offer a satisfactory explanation of a permanent or prolonged improvement in bronchial asthma by means of clinical experiments is a very difficult task, if not utterly impossible. Accepting, however, the mechanism of insulin shock in animal experiments, mentioned before, one has to expect a permanent hyperfunction or even hypertrophy of the adrenal medullas after the powerful stimulus of the shock has been repeated a number of times. In fact, experiments carried out on rabbits (Langecker, 1928) and pigeons (Riddle *et al.*, 1924) have shown that repeated injections of small doses of insulin are able to develop hyperfunction and hypertrophy of the whole suprarenal gland. Elaut (1929) produced in rabbits, cats, mice, and dogs by a single shock an undoubted hyperfunction of the adrenal medullas, demonstrated by histological and histo-

Table giving an Analysis of the Cases

No.	Age and Sex	Type of B.A.	Eosinophilia		Allergic Condition other than B.A.	No. of I.S.	B.P. Before I.S. Treatment	Highest B.P. During I.S.	Largest Dose of Insulin (Units)	Lowest Glycaemia (mg./100 ml.)	I.S. Symptoms	Result
			Before I.S. Treatment	After I.S. Treatment								
1	38 M	Allergic	7%	6%	++	13	130/89	162/92	135	36	Convulsion; perspiration	Positive for 2 years
2	29 M	"	9%	6%	+++	11	105/69	155/95	130	27	Tremor	Positive for 2½ years
3	33 M	"	13%	7%	0	7	123/83	191/118	85	28	Convulsion; unconscious	Positive for 18 months
4	37 F	"	14%	6%	+++	10	129/96	172/112	100	20	Tremor	Positive for 2 years
5	19 M	"	11%	8%	++	13	126/80	164/90	100	36	"	Positive for 1 year
6	21 M	"	8%	3%	++	6	118/78	180/90	80	18	Excitement; unconscious	Positive for 10 months
7	26 M	"	10%	6%	++	6	127/84	188/95	80	23	Perspiration; convulsion	Positive for 18 months
8	34 M	"	5%	5%	0	7	116/69	180/98	90	30	Excitement; perspiration	Relapse after 5 months
9	22 M	Non-allergic	4%	3%	0	6	119/81	168/115	80	20	Palpitation; perspiration	Negative
10	46 F	"	3%	2%	0	9	124/86	171/75	100	28	" "	"
11	33 M	"	4%	2%	0	11	115/78	168/90	120	22	Palpitation; convulsion	"

chemical evidence. If, then, insulin shocks produce hyperactivity or hypertrophy of the adrenal medullas why should this hyperactivity operate in human beings only in the prevention or treatment of bronchial asthma and not lead to the syndrome of suprarenal hyperactivity? The answer to that question lies in Cannon's (1924) experiments in which he showed that the suprarenal medulla works as an emergency measure, by "explosive" liberation of the adrenaline only when stimulated either by nervous impulses or by toxic agents, such as insulin.

From this explanation it also becomes clear that all types of arterial hypertension should be excluded from this kind of treatment. Since, during insulin shock, blood pressure rises transitorily to a considerable degree, all types of acute or chronic circulatory failure should also for obvious reasons be eliminated from this therapeutic measure. It has been repeatedly shown (Langecker, 1928; Riddle *et al.*, 1924; Gourmaghtigh, 1931) that insulin in big doses stimulates not only the medulla but also the cortex of the adrenals, which, as is known (Pfiffner, 1942), performs through its steroids a powerful antiglycolytic action, and thus cases with impaired carbohydrate tolerance must also be excluded from insulin shock treatment.

Chemically, insulin is a protein, and as such, injected into the organism, it might precipitate two different independent actions: *(a)* as protein introduced parenterally it might sometimes cause more or less pronounced symptoms of anaphylactoid shock; *(b)* as a glycolytic hormone it causes hypoglycaemia. The former action might begin almost immediately if the insulin is injected intravenously, or later if it is injected subcutaneously. One of the numerous symptoms of anaphylactoid shock is the fall in blood pressure, bradycardia, etc., and this may be the reason why Wegierko (1937) found these symptoms in some of his cases—which led him to the conclusion that vagal stimulation brings relief in breathlessness during insulin shock. In one of my latest cases of bronchial asthma, not included in the present series, three minutes after the first intravenous injection of 20 units of insulin the patient developed symptoms of anaphylactoid shock with severe dyspnoea of asthmatic type, and the whole incident was closed by the injection of adrenaline. The second action of insulin begins in about 30 minutes from its injection and reaches its peak in about 60 minutes; this is also the point when anti-insulin agents of the organism start to operate. The symptoms of the first protein phase are met by adrenaline, dissipated from the medulla as a response to the hypoglycaemic action of the insulin; at this point symptoms of the first phase (fall in blood pressure, bradycardia, etc.) might be mixed with symptoms of the second phase (hypoglycaemia) and symptoms of the third anti-insulin phase (rise in blood pressure, tremor, etc.) caused by dissipation of adrenaline and consecutive relaxation of bronchospasm. The next phase is the complete disappearance of all symptoms of the first protein phase with persistent symptoms of adrenergic type.

Summary

Out of a total of 8 allergic bronchial asthma cases 7 responded to insulin shock treatment, with complete disappearance of symptoms to the present time—i.e., from 8 months to 2¼ years. One allergic case responded with a transitory subsidence lasting 5 months.

Three cases of non-allergic type bronchial asthma did not respond to this treatment although during the shock itself each of these patients felt relief for a few hours.

Insulin shock treatment in bronchial asthma seems to operate by means of a stimulus to the adrenal medullas, inducing a hyperproduction and dissipation of adrenaline; this action must be regarded as a defensive measure of the organism itself against the toxic action of massive doses of insulin.

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CARCINOMA OF THE LIP AND ITS TREATMENT BY RADIUM (1928–44)

BY

ALEXANDER A. CHARTERIS, M.B., Ch.B., D.P.H., F.R.F.P.S.

(From the National Radium Centre, Western Infirmary, Glasgow)

The purpose of this communication is to comment briefly on the cases of cancer of the lip referred to the Radium Department of the Western Infirmary, Glasgow, during the years 1928–44 inclusive, and to give details of the methods employed as well as of the results obtained. During this period of seventeen years 293 cases were sent to the department, but 47 were not treated. It must be explained that only 9 of these were rejected as cancer cases too advanced for any sort of treatment; many extensive lesions have been tackled, irradiation being withheld only when it was clear that no benefit would result from treatment. The patient's general condition contraindicated any kind of intervention in 3 other instances, while 5 more refused any form of treatment; for the balance of the 47 rejected cases surgery was deemed more suitable and convenient owing to the small size of the lesion. The 246 patients who received treatment are therefore not a selected group, but include all stages of the disease, with and without invasion of lymphatic glands, up to those with extension beyond the actual lip area. The result as regards cervical glands is still doubtful in 4 cases treated late in 1944, and so the final group for analysis totals 242. Experience shows that the success or failure of treatment is usually obvious in one year, and so the analysis is taken up to the year 1944: this unusual fact will be dealt with more fully when speaking of results.

General Observations

The primary lesion favoured the lower lip as usual, only 8 being on the upper, while a second primary lesion appearing on the opposite lip at a later date was observed in one upper-lip case and two lower-lip cases, further treatment being successful. With eight exceptions the patients were males, and no special aetiological factors were observed, except possibly the influence of exposure at work. During the earlier years the blood Wassermann reaction was not ascertained as a routine, but it is striking how seldom in buccal carcinoma one meets with a positive result even when leucoplakia is present. Microscopical confirmation was sought only in 75 cases where some doubt existed: there were 3 cases in which the diagnosis of malignancy was doubtful. In most of the patients the diagnosis was quite obvious. By far the greatest number of cases occurred in the fifth, sixth, and seventh decades, but age appeared to have no influence either in the results or on the frequency of glandular metastases. Six patients were under 40 and thirteen over 80 years of age, the latter group doing very well indeed.

Features of Lip Carcinoma

The rational radiotherapy of malignant tumours must depend on the recognition, amongst other things, of the intrinsic biological peculiarities of the varying types of lesion encountered at different sites in the body, or even in the same organ. For example, lingual carcinoma may present a wide range of dedifferentiation from more adult types, but there is usually a great tendency towards glandular metastases. Cancer of the lip, however, is mostly of fairly adult and radio-resistant character, calling for a rather high level of dosage and spreading much less often to the related lymphatic glands. The rate of growth is not often rapid, and this fact, together with the exposed site, helps to make the patient seek advice at a reasonably early stage in the disease. Nevertheless, cases are still seen in which extension has occurred either over the chin or to alveolus, cheek, and upper lip. Such lesions can often be dealt with satisfactorily so long as the mandible itself is not invaded. Of this series 51 had lesions of this degree. The teeth should receive attention before treatment, but only in bad cases of dental sepsis is clearance of the mouth essential.

Adequate treatment of the cervical lymphatic glands is much more difficult than that of most buccal primary growths, and the attitude taken towards these lip cases is dictated by the

pathological considerations just mentioned. Of the cases 208 had no obvious involvement of glands at the time of the primary treatment, and, although the neck was not dealt with, only 19, or about 9%, developed cervical metastases at a later date. The policy with lip cases has therefore been to treat the primary lesion only, and rely upon the routine follow-up examinations to detect any development in the neck at an early stage.

Methods of Treatment

Implantation of radium has been in use from the earliest days, but adjustment of tissue dose, as regards both needle pattern and time factor, had little scientific basis at that time. The growth of physical knowledge has changed this, and efficient treatment is now possible without tissue damage and comparatively little in the way of post-radiational stigmata. The needles employed have a linear intensity of 0.6 mg. of radium element per cm. of active length, and those with a total length of 44 mm. (2 mg. Ra el.) and 32.7 mm. (1.2 mg. Ra el.) have proved most useful. The conservative nature of radiotherapy enables one to treat a wide area, and two common arrangements are a 4.5×2 cm. rectangle (three 2-mg. Ra el. closed at each end by a 1.2-mg. needle) or a 5.5×2 cm. rectangle (six 1.2-mg. needles in tandem pairs, closed at each end by a needle of the same strength). It will be noted that the strength of each line is uniform and so the dose rate must show a rise towards the centre of the area, but the results from every point of view have proved so good that no adjustment has been made. The dose delivered 0.5 cm. from the needle plane in 168 hours varies between about 5,000 *r* and 6,000 *r*, with a maximum of 6,700 *r* towards the centre. The extreme corners of these rectangles fall to a total dose of about 4,000 *r*, but with the margin provided this part is not in the tumour zone.

Preparation of the skin is important if sepsis is to be avoided. Preliminary removal of any crusts is carried out, and in the theatre soap and water, spirit, and then proflavine oleate 1% in liquid paraffin are used. Simple infiltration by 2% novocain containing adrenaline gives efficient local analgesia after premedication by omnopon (1/3 gr. (22 mg.) hypodermically). After careful measurement the implantation is carried out, each needle being stitched in place with silkworm-gut: the whole bundle of silk threads is stitched to the skin. The part is painted with proflavine oleate again, and powdered with sulphanilamide. A light gauze dressing held by a four-tail bandage is the most suitable and comfortable covering. For a week the diet will be fluid or semi-solid, and simple mouth-washes with an occasional dose of aspirin should keep the patient fairly comfortable. Luminal—1 gr. (65 mg.) by mouth at night—is sometimes helpful. Removal of the needles presents no difficulty, and sepsis is a rare complication. No external dressing is required thereafter, the part being dusted with sulphanilamide powder to seal the punctures.

The use of *double radium moulds* for treatment of the lip is the second method which has been employed. This causes no trauma, and from a physical point of view is desirable as giving something nearer a homogeneous distribution than an implantation. A few moulds curved round the lip were attempted before the days of proper physical control, but this method was put on a scientific basis only as a result of the work of Paterson and Parker (1934), the name of J. S. Fulton being specially associated with the technique. From a plaster cast a dental apparatus is worked up in a form suitable for holding a plane of radium needles inside the lip, an outer piece held to this by screws being used to irradiate the skin surface simultaneously. The apparatus is worn for some 8 hours per day with at least one rest, and treatment lasts for about 10 days. With a radium–mucosa distance of 0.5 cm. and radium–skin distance of 1 cm., about 6,000 *r* is given throughout the lip: the mucosal dose is inevitably higher than this, but no untoward effects will ensue.

After-treatment of the lip is directed to control of the necessary reaction. The skin will show a deep erythema occasionally amounting to moist desquamation unless it is kept dry. The area is not washed, but is dusted with powder from time to time; both sulphanilamide and boric powder have their uses. The patient's co-operation in keeping the skin dry is of the utmost importance. The mucous membrane shows its characteristic "film" of fibrinous exudate, calling for simple mouth-washes, aspirin, and a suitable bland diet. If the lip edges tend to stick some vaseline can be used there, but it is not allowed on the skin. Exposure is to be avoided during the earlier stages of the reaction. The process will have subsided completely in from four to five weeks, and only the first two should have been troublesome for the patient.

The *treatment of cervical glands* does not lend itself to such easy description, the diversity of methods in general use being sufficient indication of the difficulties encountered. The records of our cases mention implantation, resection, radium moulds, *x*-ray therapy, and radium beam therapy, and it is impossible to attempt any further comment at the moment, except that surgery and implantation of radium are the methods showing most promise. Work is proceeding on the general problem of treatment for malignant glands in the neck, but it will be some time before any definite pronouncement can be made.

The *after-effects of irradiation* of the lip have been studied with regard to the occurrence of tissue damage or excessive skin change, both of which would be particularly undesirable at such a site. As all surviving patients are followed up indefinitely this task has been comparatively easy. After any radical irradiation for malignant disease some degree of fibrosis and endarteritis must be present in the tissues, but in a properly treated lip case there should be no conspicuous change unless destruction by tumour has been such as to cause gross loss of substance and therefore deformity.

Naturally all patients show epilation over the treated area. This is not normally very obvious, but in the case of a man with a dark beard there may seem to be a zone of pallor even where skin change is minimal. With regard to the grosser signs of previous irradiation, 67 of the cases are recorded as showing some definite evidence of scarring, with or without telangiectases. Two cases present leucoplakia with hyperkeratosis, which merely demonstrates once more the fact that this condition responds only temporarily to irradiation: pre-existing leucoplakia will therefore reappear after treatment, although an associated tumour may be satisfactorily healed. Actual tissue damage in the form of late necrotic ulcers has been seen in 6 cases, but 4 of these were treated during the period 1929–31, when no physical control was possible. As might be expected, 5 of these 6 had been treated by implantation, but it is now felt that careful measurement of the needle pattern and placing of the plane in the centre of the thickness of the lip can almost completely obviate undesirable effects. All these necrotic lesions healed with some scarring. None was of greater extent than 1 cm. in diameter, and the lip was never perforated.

Results of Treatment

In the accompanying table an attempt has been made to show how the different groups have reacted to treatment. A small group (B) has been segregated, since irradiation was preceded by excision of the primary lesion. This method was occasionally employed during the earlier years before radiotherapy was so generally adopted for neoplasms of the lip, most of the cases being those in which there was some doubt as to the completeness of the operation. The other sections indicate clearly the good results obtained from treatment of the primary lesion, and show how these deteriorate at once when the cervical glands become involved. Three of the cases in Group C were implanted after excision; but, in view of the obviously satisfactory results achieved in the lip itself, it was thought undesirable to add to the number of groups by presenting them separately. It will be seen that when the cases are not complicated by glandular invasion (Group A), 165 (94%) patients out of a total of 175 were rendered free from disease; or, if the 9 cases requiring accessory excision be excluded, 156 out of 175 (89%). In the table these results are indicated separately for the implant and mould methods.

Where glands were present to begin with, or developed at a later date, the picture is very different, and, although the lip was healed, only 25 out of 53 cases (Groups C and D) were rendered free from disease, this representing about 48%. If all cases treated, with or without glands, are considered, it is found that a satisfactory result was achieved in 83%, but if the rejected (untreated) cases, totalling 47 less 16 operated upon satisfactorily, be added, this figure falls to 73%. The

term "failure" in the table means that the patient died of cancer, usually about a year from treatment. The failures include two fatalities in the form of one anaesthetic death during excision of a primary lesion which had failed to respond, and one case of phlebitis with generalized sepsis following operation on glands.

Cancer of Lip, 1928–44. 242 Cases treated

	Implant for Lip (168 Cases)		Moulds for Lip (74 Cases)
A. Cases without glands or glandular development	Healed	85	32
	Healed: died later of other cause	26	13
	Residue or small recurrence excised: well	6	3
	Failure	3	7
	Total	120	55
	Free from disease	117 (97%)	48 (87%)
	Free from disease (radium only)	111 (92%)	45 (81%)
B. Cases without glands or glandular development; excision, then radium for lip	Healed	8	3
	Healed: died later of other cause	2	0
	Failure	0	1
	Total	10	4
C. Cases with glands when first seen	Healed	10	1
	Healed: died later of other cause	3	1
	Failure (due to glands)	12	7
	Total	25	9
D. Cases which developed glands after successful treatment of lip	Healed	5	2
	Healed: died later of other cause	1	2
	Failure (due to glands)	7	2
	Total	13	6
Totals		168	74

It appears to be a feature of lip carcinoma that in the great majority of cases the result is known in about a year, and the frequency with which this was found made it reasonable to include patients up to the year 1944. The result for every case has been scrutinized to determine this point, and it is a remarkable fact that every failure in the whole 1928–44 series has been obvious in the first year with but 7 exceptions. In only one of these was there a truly late recurrence of disease: the patient was treated successfully in 1931 for the lip, which remained healed, but in 1935 he developed a glandular metastasis, and this proved fatal, no other primary lesion being found. Although the other 6 patients lived two to three years after treatment, within a year it was quite obvious in 4 of these that the patient would die of cancer of the lip or glands, while in another the cause of death was development of an independent antral carcinoma. Only in the one remaining case was the issue in any doubt till 18 months from the time of treatment. It is for those reasons that the survey has been taken up to so recent a date; and this fact must be emphasized, since such a procedure could not ordinarily be adopted while recording cases of cancer.

Owing to the age of many of the patients, a number died of some other complaint a period of years afterwards: of all those shown in this category only 24 died within the first five years, the remainder of deaths being at intervals up to thirteen years.

Conclusions

The facts adduced show that the use of radium is a satisfactory radiotherapeutic method for cancer of the lip, although adequate treatment of the cervical glands still presents a serious problem. It is suggested that surgery and implantation of radium are the most promising methods for the neck, but certain work on the radiotherapeutic approach to this problem is not advanced enough for more to be said at present.

The cases treated by implantation of the lip include the worse ones, since the mould method is not readily adaptable to very bulky lesions or those spreading beyond the lip, yet the tabular statement shows that implant results are superior to those obtained by the use of moulds. Moreover, implantations throw less work upon a radiotherapeutic department, and also on the ward nursing staff, so that this is now regarded from all points of view as being the method of choice for radium.

The malign influence exerted upon results by invasion of cervical glands is strikingly illustrated, but it is shown that the percentage of cases developing this complication is a small one.

It is with pleasure that I acknowledge indebtedness to my colleagues on the visiting staff of the Western Infirmary for their friendly co-operation in giving me every facility, both in wards and in operating theatres, for the necessary radiotherapy; to our physicist, Dr. McFarlane, for working out the dose-rates in the standard implants and also any special ones; and particularly to my clinical assistant, Dr. W. Allan Crawford, for much painstaking work in extracting from our records the details upon which this paper has been based.

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PYLORIC STENOSIS: SELECTIVE MEDICAL AND SURGICAL TREATMENT

FIFTY SUCCESSIVE CASES WITHOUT A DEATH OR FAILED MEDICAL TREATMENT

BY

N. M. JACOBY, M.D., M.R.C.P.

Consultant Paediatrician, Kent County Council; Registrar to the Children's Department, Guy's Hospital

The surgical treatment of congenital hypertrophic pyloric stenosis is now a very safe procedure in skilled hands, and Levi (1941) and Paterson *et al.* (1941) have published large series of cases with a mortality rate below 5%. Although many who have given medical treatment with atropine methylnitrate a trial know that it will cure some cases, they have in the main abandoned the method. This is because they fear the high mortality rate in the "failed medical case," which subsequently has to have an operation. Some administer "eumydrin" for a few days, and if vomiting does not rapidly cease submit the infant to operation. Such a procedure nearly always fails, and in fact it would have been better if the child had been operated on at the beginning. The result of all this has been a swing of opinion back to the view that Rammstedt's operation is the method of treatment for all cases. It is certainly obvious that any alternative method must be able to offer an equal degree of safety.

Jacoby (1944) suggested certain criteria for selecting individual cases for medical or surgical treatment, and had at the time treated 26 cases, with a mortality rate of 8%. Since then considerably more experience of the method has been obtained, and it can now be reported that 50 successive cases have been treated without any fatalities, and, what is equally significant, not one of the 26 cases selected for medical treatment failed to respond readily or had to be subjected to operation. On these results it seems reasonable to suggest that medical treatment has a definite part to play; for not only does it avoid unnecessary operations, but in certain cases—e.g., where there is secondary infection or diarrhoea—it is probably safer than operation. Moreover, in certain suitable cases, admission to hospital can be avoided altogether.

Method of Medical Treatment

It must be stressed that the medical treatment advised in the original paper, and employed ever since, is different from that in general use. The main difference lies in the radical reduction of feed volume at the beginning of treatment; and this is vitally important, as without it early cessation of vomiting cannot be expected. I believe that, irrespective of what quantity of feed passes the pyloric sphincter before vomiting occurs, the actual vomiting itself is highly undesirable, because it both weakens the infant and fills the attendants with gloom. It appears that atropine methylnitrate takes three or more days to exert its full effect, and it is probable that during these waiting days the cessation of vomiting is due mainly to feed-volume reduction. At the same time it is obvious that this method of treatment is totally unsuited to a severely dehydrated infant, and in such circumstances should never be used.

To achieve a satisfactory result with medical treatment the following procedure is advised:

1. Exact diagnosis by unmistakable palpation of a "palpable pyloric tumour."
2. Careful selection of cases according to the criteria given.
3. Reduction of feed to 1 oz. (28 ml.) four-hourly in infants under 6½ lb. (3 kg.), and 1½ oz. (42 ml.) in infants over 6½ lb. Breast milk is preferable, but whatever feed is used it should be of full strength.
4. Atropine methylnitrate 0.6% in alcohol—4 drops from a "fountain-pen filler" into the back of the mouth, 15 minutes before four feeds on the first day and then before three feeds on the second or third day; when vomiting has completely stopped, 2 drops thrice daily for about 16 weeks.
5. No stomach-washing unless the vomit contains large amounts of mucus.
6. No parenteral fluids by any route. A case that is in real need of hydration should be operated upon as soon as possible.

Method of Surgical Treatment

The method of surgical treatment used in this series was that advised by Levi, except that the feeding-chart was modified so as to take nearly six days after operation before full-strength milk was reached.

Criteria for Selection of Cases

The criteria for selection of cases have not been altered since the original paper, though an extra contraindication to medical treatment (haematemesis) has been added. It may perhaps be convenient to recapitulate them here.

1. *Indications for Surgical Treatment:*
   (*a*) Vomiting beginning in the second week or earlier.
   (*b*) Severe dehydration.
2. *Contraindications to Surgical Treatment:*
   (*a*) Infection.
   (*b*) Diarrhoea.
3. *Indications for Medical Treatment:*
   (*a*) Vomiting starting in the fourth week or later.
   (*b*) Vomiting continuous for three weeks or more before the infant is first seen, provided it is not severely dehydrated.
4. *Contraindications to Medical Treatment:*
   (*a*) Severe dehydration.
   (*b*) Haematemesis.

Table giving an Analysis of Results

	Medical Cases	Surgical Cases
Total cases	26	24
Male	22	21
Female	4	3
Average age at onset of vomiting	4 weeks	2·7 weeks
Average age on admission	6·3 weeks	4·7 weeks
Average birth weight	7·3 lb. (3·3 kg.)	7·3 lb. (3·3 kg.)
Average weight on admission	8·1 lb. (3·67 kg.)	6·7 lb. (3·04 kg.)
Number breast-fed	12	13
Number artificially fed	14	11
Average no. of days in hospital	13·4	13

These results show very much what would be expected if the criteria were followed. One point, however, is particularly worthy of note, and that is that 50% of the patients were artificially fed. Inquiry as to the reason for discontinuing breast-feeding revealed that in almost every case it was in the belief that the vomiting was due to the breast milk disagreeing with the infant. It cannot be too strongly emphasized that such a condition does not exist, and that artificial feeding can only lead to a worsening of the condition.

Selected Case Reports and Comments

When selecting cases for medical or surgical treatment it is found that in the majority a decision is soon arrived at. There are, however, certain cases in which the various indications and contraindications balance each other, with the result that personal judgment has to be used. The following selection of cases attempts to show how some of these problems were dealt with.

Case 1.—Female, aged 6 weeks; artificially fed; birth weight, 7½ lb. (3.4 kg.). Vomiting started at 5 weeks. On admission the child was collapsed and seemed moribund. The weight had fallen to 6 lb. 5 oz. (2.87 kg.); the temperature was 102° F. (38.9° C.). She was very dehydrated and was having quite severe haematemeses. It was obvious that no form of treatment other that resuscitation could be undertaken. At the end of 36 hours she was fully hydrated by parenteral means, the temperature had fallen to 98° F. (36.7° C.), and the condition was much improved. As she now appeared, the indications were for medical treatment, but in view of her previous dehydration and haematemeses it was decided that operation must be performed. Recovery was uneventful.

Case 2.—Aged 11 days; birth weight, 8 lb. (3.6 kg.); breast-fed. Vomiting started on the seventh day. Weight on admission, 7 lb. 12 oz. (3.5 kg.). The infant was having six loose green stools daily and had an upper respiratory infection and sepsis at the umbilicus.

Normally, cases that start vomiting so early should be operated on, but here it was felt that the diarrhoea and respiratory infection made this a dangerous procedure. Medical treatment was started, and vomiting had completely ceased by the third day. The patient was fit for discharge by the tenth day.

Case 3.—Aged 2 months; birth weight, 5 lb. 10 oz. (2.55 kg.); artificially fed. Vomiting started at 2 weeks. Weight on admission 5 lb. 9 oz. (2.52 kg.). Was severely dehydrated and having tetanic spasms. Because of the very long period of vomiting associated with dehydration it was felt that rapid relief was required, and an operation was performed forthwith. Seven days later the stools became loose and frequent. The child was given a blood transfusion and then dextrose-saline for 24 hours, and was put on to peptonized breast milk. The stools rapidly improved, and the feed was gradually changed to peptonized artificial feed, which was slowly depeptonized. This infant through its long period of semi-starvation had almost lost its tolerance for food, and after operation presented a feeding problem.

Summary

Fifty cases of congenital hypertrophic pyloric stenosis were dealt with by selective medical and surgical treatment. There were no deaths and no failures of medical treatment.

A method of medical treatment involving feed-volume reduction is described.

Criteria for the selection of cases for medical or surgical treatment are given.

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Medical Memoranda

Diphtheritic Encephalomyelitis

Nervous symptoms, complications, and sequelae of diphtheria occur often enough. They are clinically important though peculiar in type. Their pathology and pathogenesis are not yet perhaps completely understood. References in the literature to diphtheritic encephalomyelitis are very few. Querido (1928), who recorded a case of post-diphtheritic encephalitis, remarked that parenchymatous inflammation of the central nervous system is the rarest sequel of diphtheria. Hall (1932) reported a fatal case of acute toxic encephalitis in a female child aged 18 months. In addition to membrane in the pharynx, from which diphtheria bacilli were cultivated, the necropsy showed distension of cerebral vessels, with linear haemorrhages throughout the white matter.

Below is recorded a fatal case of encephalomyelitis which occurred as a complication of faucial diphtheria. The extreme rarity of the condition warrants this report.

CASE HISTORY

A Sikh male child aged 15 months was admitted into the children's ward with the complaint of unconsciousness with convulsions, duration three days. The onset was sudden. About a fortnight back the child had had vomiting for four days and fever for two days. There was no other history of significance. On examination the patient was comatose; temperature 97.4° F. (36.3° C.), pulse 110, and respirations 26 per minute. The pupils were moderately dilated and reacted to light. The neck was soft, and Kernig's and Brudzinski's signs were negative. There was left hemiplegia. Tendon-jerks were exaggerated and Babinski's sign was extensor on both sides. The tonsils were enlarged, with a small suspicious membrane on the left. Other systems were normal.

Investigations.—Fundi: Only slight bilateral venous congestion was present. Cerebrospinal fluid: 15 ml. of clear sterile fluid was drawn out under high tension by lumbar puncture; a few mono-

cytes were found; protein was present in traces, sugar 55 and chloride 650 mg. per 100 ml. Blood: Total white cells, 20,800 (polymorphonuclears 92%, lymphocytes 5%, and large mononuclears 3%); no parasites. A throat swab revealed a fair number of diphtheria bacilli (confirmed by culture), streptococci, and *M. catarrhalis*. Urine: Acetone present in fair amount. Stool, normal. Wassermann reaction of the cerebrospinal fluid, negative.

Progress and Treatment.—Antidiphtheritic serum (32,000 units) was injected intramuscularly. He was put on three tablets of cibazol and 4 minims (0.24 ml.) of nikethamide t.d.s. by mouth per day. Next day a throat swab was again examined and a fair number of diphtheria bacilli, streptococci, and *M. catarrhalis* were seen. 40,000 units of serum were injected intramuscularly. After 24 hours 20 ml of clear cerebrospinal fluid was drawn out under high tension. The fluid, which was sterile, showed protein in traces, sugar 46 mg. and chloride 650 mg. per 100 ml.; a few monocytes were present. A throat swab showed a few diphtheria bacilli. Another intramuscular injection of 40,000 units of serum was given. Next day a throat swab showed no diphtheria bacilli even on culture. 30 ml. of clear cerebrospinal fluid was drawn out under very high tension. The patient's condition gradually worsened and the coma deepened. He started having fever ranging up to 102° F. (38.9° C.), and the pulse rate varied from 120 to 140 per minute. The pupils were dilated and fixed. Another 10,000 units of serum were injected. The patient died after a further two days. On the last day the child was deeply comatose; temperature 102.4° F. (39.1° C.), pulse rate 170 per minute; pupils widely dilated and fixed. During the last two days feeds and medicines had to be given by the nasal route. Necropsy was not possible.

My thanks are due to Major-Gen. H. C. Buckley, M.D., F.R.C.S., C.S.I., I.M.S., Principal, Medical College, Agra, for his kind permission to publish this report and also to my colleagues of the pathology and biochemistry departments for the valuable help I received in investigating the case. I wish to express my appreciation of the services of my house-physician, Dr. B. P. Kacker, and the nursing staff in the treatment of the case.

P. N. LAHA, M.D.Patna,
Lecturer in Diseases of Children, Medical College, Agra, India.

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A Case of Dysphagia in a Woman aged 78 cured by Tonsillectomy

The following case is of interest because, although dysphagia due to chronic hypertrophy of the tonsils is well known in children, it must be extremely rare in the aged, whose tonsils are usually atrophic.

CASE HISTORY

Mrs. W., aged 78½, was first seen on June 28, 1945, when she complained of pain on swallowing. She could not get any solid food down, and nearly choked when drinking water. She had lost 4 st. (25.4 kg.) in weight and was too weak to do her own housework. She also complained of a vague aching sensation in the left side of her throat.

On examination she had a painful enlargement of the left upper cervical glands, and at the time it was thought that the enlargement was probably inflammatory. It was found that the tonsils were chronically hypertrophied and almost touching in the midline. The nose was normal, and on indirect laryngoscopy there was no excess secretion in the laryngopharynx, which is usual in cases of post-cricoid carcinoma. It was thought that the dysphagia was probably due to the enlarged tonsils, but that tonsiliectomy was definitely out of the question. She was asked to report back in two weeks' time for a review.

The patient did not return again until Oct. 11, when her complaints were just as bad as ever; the condition of the throat had not changed. After great deliberation she was advised to come into hospital either for diathermy of the tonsils or for removal of one tonsil to begin with. She was admitted on Oct. 23, and with pre-operative seconal gr. 3 (0.2 g.) and omnopon gr. 1/3 (22 mg.), the anterior and posterior faucial pillars were injected with a local analgesic. Dissection of the first tonsil was started, but this caused great respiratory embarrassment, and it was decided to remove both tonsils with a guillotine. The tonsils were mobile and easily enucleated with minimum discomfort. There was little bleeding, and both tonsils were removed within one minute. There was no post-operative complication, and the patient was returned to bed and almost immediately found swallowing greatly improved. She was discharged in one week.

Nothing was heard of the patient until February, 1946, when she was admitted on to the ophthalmic side for a dacryocystectomy. At this time she stated that she was better immediately after tonsillectomy, was eating and drinking normally, had put on weight, and had again started doing her own housework and washing. She was sleeping well at night. Examination of her throat showed that the tonsillar fossae were clear and the faucial pillars intact; there was minimal scarring.

I would like to thank Mr. W. M. Munby for permission to publish this case.

PETER A. THORPE, M.B., Ch.B., D.L.O.
Resident Aural Officer, General Infirmary at Leeds.

Reviews

THE GROWTH OF CHILDREN

Nutrition and Chemical Growth in Childhood. By Icie G. Macy, Ph.D., Sc.D. Volume II. Original Data. With foreword by Lawrence Reynolds, M.D., and a Supplement by Julia Outhouse Holmes, Ph.D. (Pp. 1,460; illustrated. $10.00.) Springfield: Charles C. Thomas.

The results of ten years of research have been embodied in *Nutrition and Chemical Growth in Childhood*, and in Vol. II, issued under the subtitle "Original Data," the facts and figures are fully presented. Dr. Icie G. Macy, who is director of the research laboratory of the Children's Fund of Michigan (the sponsors of the investigation), presented in Vol. I the methods used and the average results obtained. Here she gives in great detail the results of over 600 five-day metabolic balance periods conducted on twenty-one boys and girls. In addition the present volume contains the results of studies of the nitrogen, calcium, and phosphorus metabolism of a further twelve pre-school boys and girls conducted under the direction of Prof. Julia Holmes. The first impression is confusing. The volume is not suitable to be looked through as a continuous text, but careful reading of the study of, say, one or two children begins to bring out the value of the data. Of this there can be no doubt, and more detailed study induces a sense of high regard for the patience and ingenuity shown by the team of workers and the splendid co-operation of the children. Indeed, if there is such a thing as professional training for suitable employment as subjects for physiological and especially nutritional research, these children have had it, and should be certain of steady employment for the rest of their lives!

Vol. III is planned to give the interpretation of the results obtained, and when it is available it will be easier to assess the ultimate value of the tremendous undertaking. It is fair to say of this present volume in isolation that the complicated trees of analytical data obscure the wood of true knowledge. Nevertheless, all workers in the field of nutrition and metabolism will find in it some valuable help, whether it be in relation to problems of growth, with which the whole research project is fundamentally associated, or to special details of the individual chemicals studied. As is pointed out in a foreword, nearly one-third of American recruits in the recent campaign were rejected for physical defects. "A sad commentary," says the writer, Dr. Lawrence Reynolds, "on our boasted wealth and industry." The Children's Fund of Michigan was established "to promote the health, welfare, happiness, and development of the children of the State of Michigan, primarily, and elsewhere in the world." This work of Dr. Macy is an important contribution to that end.

GUIDE TO POST-WAR EUROPE

Health Recovery in Europe. By Sir Arthur S. MacNalty, M.D., F.R.C.P., F.R.C.S., and W. Franklin Mellor. (Pp. 180. 7s. 6d.) London: Frederick Muller Ltd.

This little book is an essay in shadow and subdued light. In the first part of it an account is given of health and nutritional conditions in Europe during and since the war. The authors have continually to apologize for fragmentary and imperfect statements and the lack of precise information, though enough is given to depict a situation which in some parts of the Continent seems to be desperate beyond remedy. That wholly unrelated diseases should have reached their peaks of incidence at about the same time all over the Continent is the last and in some ways the sorriest of the many strokes of Fate. This book made its appearance during the first General Assembly of the United Nations. Even while the delegates were sitting in London the picture was darkened by news of the failure of crops in various countries and the shadow of famine crept closer. Here was an opportunity, with the leaders of nearly all the nations meeting together, for them to sit down and plan to avert the worst calamity. But they did nothing of the kind. They talked politics, not economics; they wrangled over issues relatively unimportant instead of arranging for the pooling of resources and the opening of highways of distribution; and they passed an empty resolution on the food question and went their way with the words of the British Prime Minister in their ears that the success achieved had been remarkable! The proceed-

ings of the United Nations lend an ironic touch to the optimistic title of this book and to the pious ascription at the end, that if the United Nations wield the sword for the coming battle against disease as well as they did the sword of war, then victory is assured.

The story of medical relief work is well told. Four principal bodies have been concerned in health reconstruction: the Civil Administration of the military authorities, U.N.R.R.A. with its Health Division, the voluntary agencies such as the Red Cross and Order of St. John, the Friends' Relief Service, and the Save the Children Fund; and finally the national health and medical services of various countries. One of the two most hopeful elements in the situation is the development of the public medical services, the other being the availability of new remedies and means of combating disease. On one point epidemiologists are still in the dark. The authors say that influenza, which made such terrible ravages in 1918–19, is the only important epidemic disease which has been comparatively unaffected by war conditions. Such outbreaks as have occurred have not even equalled in severity three or four which took place in the inter-war years.

The authors, one of whom is a former Chief Medical Officer of the Ministry of Health and the other a former member of the Health Section of the League of Nations Secretariat, have produced a book which, despite its inevitable gaps and guesses, will be of real use to international health workers. Some day, no doubt, a complete authenticated and statistical record will be compiled.

MEDICAL TREATMENT

Textbook of Medical Treatment. By Various Authors. Edited by D. M. Dunlop, M.D., L. S. P. Davidson, M.D., and J. W. McNee, M.D. Fourth edition. (Pp. 923. 30s. plus 8d. postage.) Edinburgh: E. and S. Livingstone.

This *Textbook of Medical Treatment* by a group of Scottish authors has established itself as the standard work on the subject. It is informed by a spirit of urbane rationalism which avoids alike the perils of therapeutic nihilism and of credulity, and it is written in a gracious and harmonious style instead of being a mere catalogue of remedies. It is not surprising, then, that it has reached a fourth edition, and this edition is to be particularly welcomed because of a change of format. The book is now taller and slimmer, and though austerity has narrowed the margins the type is clear and legible. The price is very reasonable for a book of this size.

The last eighteen months have been a difficult time in which to revise a textbook owing to the continuous reassessment of the sulphonamides, penicillin, and thiouracil. The doses of penicillin here suggested are on the whole smaller and the enthusiasm for thiouracil greater than many of us would exhibit to-day. Penicillin has replaced pentnucleotide in the treatment of agranulocytosis and neo-arsphenamine in Vincent's angina. Less forgivable is the scant notice paid to homologous serum jaundice, which has been the major therapeutic catastrophe of the war. It would not do, however, to end on a note of criticism, and we should like to congratulate the editors on having made available so admirable an account of modern medical treatment, particularly at a time when so many graduates are refurbishing their knowledge for the tasks of peace.

RUDIMENTS OF PSYCHIATRY

A Handbook of Psychiatry. By Louis J. Karnosh, M.D., Sc.D. With the collaboration of Edward M. Zucker, M.D. (Pp. 302; illustrated. 25s.) London: Henry Kimpton. 1945.

The authors have set out to prepare a comprehensive but short survey of modern psychiatry in terms which are as non-technical as possible and with the avoidance of unnecessary theory and speculation. They aim at giving the general practitioner who does not seek to become a psychiatric specialist a readable account of everything included under the heading of psychiatry, and at the same time a ready reference book in which he can quickly find what he wants to know about the diagnosis and treatment of any patient with whom he is confronted. In this ambitious task they have succeeded reasonably well, giving prominence to the type of case which is most commonly encountered, though the psychoneuroses, which must surely outnumber enormously even the cyclics and schizoids in any doctor's practice, occupy a late position in the book. Due notice is taken of psychosomatic medicine, psychopathic personalities, and the war neuroses, and there is the usual chapter on psychiatry and the law which again exposes the somewhat unsatisfactory state of this relationship. Treatment is described in sufficient detail, though it is obvious that the judgment which can decide on the right treatment for the particular case can come only from long experience of disorders of personality. Rule-of-thumb methods are even less appropriate in dealing with mental disease than they are when applied to physical disease. Case histories, and photographs of patients as well as of tissues, illustrate and enlighten the text of a book which is to be recommended. It is certainly as good as any volume of this limited scope can be.

A TEXTBOOK OF PHYSIOLOGY

Howell's Textbook of Physiology. Edited by John F. Fulton, M.D., with the collaboration of Donald H. Barron, John R. Brobeck, Robert W. Clarke, George R. Cowgill, William U. Gardner, David I. Hitchcock, Harold Lamport, David P. C. Lloyd, Leslie F. Nims, and Theodore C. Ruch. Fifteenth edition. (Pp. 1,304; illustrated. 40s.) London: W. B. Saunders Company. 1946.

This important textbook has been very thoroughly revised by the new editors under the leadership of Prof. Fulton, and, indeed, much of it is entirely rewritten on modern lines by experts in the various branches of the subject. The contributors are numerous, for in addition to text written by the editors there are considerable contributions by J. Russell Elkinton, John H. Ferguson, Robert G. Grenell, William F. Hamilton, Ebbe C. Hoff, Hebbel E. Hoff, Chas. W. Hooker, Walter Landauer, Harry D. Patton, Robert F. Pitts, Eric Ponder, Frank W. Weymouth, and Alfred E. Wilhelmi, making a total of 24 contributors. The production is thus thoroughly composite in character, and the task of editing must have been correspondingly heavy. It seems, however, to have been done as efficiently as could have been desired, and to give a correct picture of modern American physiology. It is prefaced by a short account of the historical background of American physiology, which closes with the significant words: "When peace comes again every physiologist who has the future of his subject at heart will hope to pursue the science for its own sake, even as Howell pursued it during sixty-five years of unremitting endeavour—an endeavour dedicated in the first instance to physiology pure and unapplied."

The book can be recommended as a reliable work of reference dealing with physiology in its most modern aspects: the biochemical portions, though adequate and up-to-date, are less fully treated than the more biological portions of the text. There is stress on biophysics, and perhaps relatively too much space is taken up by the chapters dealing with the nervous system and the special senses, which, with muscle and nerve, occupy nearly 540 pages. There are no chapters devoted to the endocrine organs, references to which merely crop up incidentally in the other sections. The whole book is authoritative and will be of value to British physiologists and to advanced students. The print and illustrations are excellent.

Notes on Books

The New York Tuberculosis and Health Association (386, Fourth Avenue, New York 16) has published as a volume in typescript a *Tuberculosis Reference Statistical Yearbook* for the year 1944, with comparative summaries for 1943 and the five-year period 1940–4. The contents include a summary of morbidity and mortality from tuberculosis in New York and New Jersey, the large American cities, the United States generally, Canada, and selected European capitals and countries, and also clinic reports from New York City.

A list of scientific institutions, societies, and research workers in the Netherlands Indies has been reprinted as a pamphlet from *Science and Scientists in the Netherlands Indies*, which was noticed in these columns on March 30, 1946 (p. 488). Copies of this reprint may be obtained without charge by writing to the Library, Board for Netherlands Indies, Surinam and Curaçao, 10, Rockefeller Plaza, 14th Floor, New York 20, or to the Editor of *Chronica Botanica*, P.O. Box 151, Waltham 54, Mass., U.S.A.

The *Dentists Register* for 1946 has now been published for the Dental Board of the United Kingdom by Constable and Co., Orange Street, Leicester Square, W.C.2, price 15s. The total number of names appearing at the end of last year was 15,422—16 less than the figure for 1944. All but one of the new entries were of persons registered as graduates or licentiates.

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THE BILL IN THE COMMONS

The Special Representative Meeting showed beyond doubt that the majority of medical men are strongly opposed to some of the principal features of the Bill, the Second Reading of which was debated in the House of Commons last week. The power of the Minister to introduce by Regulations almost any change he wishes raises wide apprehension. We must, however, acknowledge that Mr. Aneurin Bevan appears to have resisted pressure from his own party as well as from the Negotiating Committee. Many members of the Labour Party in the House of Commons would have preferred a whole-time salaried State service, with no concessions to private practice. In his temperate exposition of the Bill Mr. Bevan showed himself willing to consider amendments at the Committee stage. The job of the profession is to press hard for those amendments which it considers to be essential to an ordered evolution of the medical services of this country.

From the nature of his work and the imperfect state of medical knowledge the doctor who is non-partisan in politics distrusts revolutionary changes in the forms of medical practice. The British Medical Association has been criticized for interpreting this Bill as the first and deliberate step towards a whole-time salaried State medical service. Mr. Bevan, it is true, has made provision for private practice in both the hospital and the home. In the debate he said: "Some of my hon. friends on this side of the House are in favour of a full salaried service. I am not. I do not believe that the medical profession is ripe for it. . . . Therefore the main source at the moment through which a general practitioner will obtain his remuneration will be capitation." When Mr. Reid observed that this indicated that "the Minister is out for a full-time salaried service as soon as he feels he can impose that upon the country," Mr. Bevan interjected, "There is all the difference in the world between plucking fruit when it is ripe, and plucking it when it is green." So the medical profession may be excused for feeling uneasy. Mr. Reid went on to ask whether the Labour Party's pamphlet, "A National Service for Health," published in April, 1943, still held good. He quoted this from it: "In the Labour Party's opinion it is necessary that the medical profession should be organized as a national full-time salaried pensionable service." Mr. Arthur Greenwood, the Lord Privy Seal, who wound up the debate, gave the answer: "What was published by my party in 1943, to which the Right Hon. and Learned Gentleman referred, we of course stand by. We have never repealed any of our policy, and we shall continue to march on in the light of that policy." However conciliatory the Minister may now be, the fate of the medical profession is sealed if the Labour Party remains in power long enough to carry out its declared policy. If the medical profession, as we believe it does, regards a whole-time State service as harmful to the public and the profession, then it must do all it reasonably can to stop at its source a stream that threatens to become an inundation.

What chance is there of modifying the Labour Party's policy for a whole-time salaried State medical service, now we know from the Lord Privy Seal that this policy stands in spite of the provisions of the present Bill? In opposing this the profession fortunately has the strong support of the Parliamentary Secretary to the Ministry of Health, Alderman Key, who, having no vested interest in medicine, cannot be accused of this very wicked thing. In his able speech on May 1 he made two statements of the highest importance—statements which, when they have been made by medical spokesmen, have been derided by those who maliciously claim that doctors have no other concern in their profession than an economic one. Mr. Key said this: "We regard the free choice [of doctor] by the patients as being the more important principle, and, therefore, we put forward a compromise"—the compromise, that is, of paying general practitioners partly by salary and partly by capitation fee. Mr. Key's statement summarized the analysis of the situation previously made by Mr. Bevan: "There ought to be nothing to prevent anyone having advice from another doctor than his own." Mr. Bevan went on to say that if someone hears that a certain doctor in a certain place is good at this, that, or the other, he wants to "go along for a consultation." In response to interjections from his own side of the House, Mr. Bevan remarked that this was a field "in which idiosyncrasies are prevalent. If an individual wishes to consult, there was no reason why he should be stopped."

It is encouraging that the two principal Government spokesmen have not been misled by their own party propaganda on this question of free choice. We should add that no medical spokesman has ever pretended that free choice means unlimited free choice: the choice of any service or commodity is always limited by the circumstances of time and place. To assert that the limitation of choice means the absence of choice is partisan nonsense. Mr. Key carried the argument a significant step forward, thus: "*Second, and more important, a full salaried service is inconsistent with the free choice of doctor, to which we have agreed.* (Our italics.) We have far too much respect for the political acumen and intelligence of Mr. Bevan and Mr. Key to believe that they have been persuaded to this view by what many of their supporters have ridiculed as B.M.A. propaganda. The Labour Party is in fact in a dilemma, and its two principal spokesmen in the debate last week had the courage to admit it. The Labour Party's dilemma is the doctor's dilemma—namely, how to reconcile the free choice of doctor with a whole-time salaried service. If both the medical profession and the Labour Party, approaching this problem from completely different standpoints, reach the same conclusion, then there must be something in it. The medical profession must, therefore, press for amendments to the Bill which will remove the Labour Party from the horns of their dilemma.

Mr. Key carried his analysis still further by relating the whole-time salaried service to direction: "A large salary," he observed, "cannot be paid irrespective of the work

done, and the basis of fairness cannot be introduced into a wholly salaried service under existing conditions without compulsory allocation of the work—that is, distribution of patients among doctors." This is indeed a remarkable affirmation of the profession's contention. In general practice a whole-time salary not only is incompatible with free choice but cannot be accompanied by even "a basis of fairness"—unless there is compulsory distribution of doctors. Although Mr. Bevan claimed that the control to be exercised by the Medical Practices Committee was negative, Mr. Greenwood, in a more flamboyant exposition of party doctrine, said in relation to a statement about a housing estate without a doctor: "Until now there was no authority to order a doctor to go there." Now that all political parties and the medical profession agree to a 100% service, there would seem to be no case for any form of direction, positive or negative. It would be illogical for the Labour Party to insist on maintaining a central directing agency because of its pamphlet policy on a whole-time salaried State service which it now agrees is incompatible with the free choice of doctor which it now decides is desirable.

One of the obstacles in the way of a rational hospital service that gives full scope for local responsibility and enthusiasm is the existing chaos of local authority government. Reform of the hospital service has had to precede reform of local government. Mr. Bevan therefore had to decide "that local authorities cannot be effective hospital administrative units." To get past this obstacle, and to dissolve the antagonisms between council and voluntary hospitals, he proposes the solution of nationalization. His remark that hospital flag days ought to be a thing of the past was received with assent from all sides of the House. There was point, too, in his observation that to call some hospitals voluntary was partly a misnomer. They are not voluntary in the old sense that they are charitable institutions for the free treatment of the sick poor. But they are voluntary in the sense that those who contribute to their upkeep, both poor and rich, do so willingly because they wish to play a personal part in possessing and maintaining something they regard with affection and pride—something with a local habitation and a name. Mr. Messer, Labour Member for South Tottenham, usefully distinguished between "the mechanical socialistic services" and "the second type of social service [which] is the human social service which affects the individual." This second type of social service, he observed, was important "not merely because of what is done but because of the way in which it is done." The atmosphere of the hospital was as important as the cleverness of the doctor. In an organization like the London County Council, which in his view was overcentralized, "you see so many hospitals so much alike. . . . Their uniformity is not a good thing." And he criticized his Minister in this way: "What the Minister has done is to say, 'I am the final arbitrator in deciding who shall man every stage of administration.'" It is just because the hospital service is not a mechanical service—not a series of engineering repair shops—that the Royal Colleges and the B.M.A. have deplored the proposed transfer of all hospitals to the ownership of the State. If this happens we shall "see so many hospitals so much alike."

Uneasiness about the uniformity of a State hospital service came out in the interesting contribution to the debate made by Dr. H. B. W. Morgan, Labour Member for Rochdale and member of the Council of the B.M.A. Although he praised the proposed co-ordination and unification of the hospital system, he made a plea for special consideration of certain hospitals. He instanced the Quakers' hospital at York, which had "a special aspect, a meditative, contemplative aspect which is very valuable in certain mental cases." He presumed the Minister would not interfere with the unorthodox type of mental treatment given. He said he had heard that the Royal Masonic Hospital was prepared to turn itself into a nursing home rather than be included in the scheme. He instanced the Manor House Hospital, with which he was associated, as "a voluntary hospital supported by the country people"; he also referred to the hospital for the dying in Hackney. Dr. Morgan asked that the "special peculiarities" of these hospitals "should receive special consideration from the Minister." And he went on to refer to the Service hospitals. Were the hospitals of the Ministry of Pensions to be taken over? He then made an observation which goes to the root of the difficulty: "I am convinced that a claimant for a pension should go into a hospital where he can get an *independent opinion* and not to one under the department concerned with granting his pension." (Our italics.) The medical profession holds with all the force of an instinct the conviction that this independence in arriving at a medical judgment must be absolutely unimpaired. If a patient's condition is to be assessed medically in relation to claims upon the State or industry, then he or she must feel that the doctor's judgment is unclouded by any fear of what a third employing party may say or do. One of the problems of the industrial medical service is the worker's suspicion that the works doctor is on the side of the management. In a State hospital service the State will be the management, and in the view of the patient and the doctor so much the more powerful an intervening influence.

When we recall that the Bill gives the Minister power to alter by Regulations the membership and procedure of Regional Boards, Hospital Management Committees, the governing bodies of teaching hospitals, and Local Executive Councils, and power to bring to an end any one person's tenure of office on these bodies; and when we understand that the central administration of such a centralized service can be carried out only by Civil servants, we cannot believe that the Minister has yet found the right solution to a formidable problem.

THE REPRESENTATIVE MEETING

The opposition to the Government's Health Bill shown by the Panel Conference and the Representative Meeting was in strong contrast to that shown in the House of Commons. The Representatives were more clear-cut and emphatic in expressing their disagreement, and so strong was the feeling of the meeting that at times it looked as if a head-on collision with the Government would be inevitable. Medical men, whatever their political views, do recognize the fact that the Labour Party is in power with an

overwhelming majority. This does not mean acquiescence in all that the Government proposes to do in order to reform the medical services of Great Britain. But it does mean that any attempt to modify objectionable features in the present Bill must be made by reasoned argument. Obviously no Government can coerce a profession into a service unacceptable to it, and, to be fair to Mr. Bevan, we doubt whether he wants to do this. No responsible Minister of Health would court failure by putting an Act on the Statute Book under the terms of which the doctors of this country would feel unable to give unhampered professional advice and aid to those in need of them. The Special Representative Meeting showed a remarkable solidarity of feeling, and in their ovation to the Chairman of Council, Dr. Dain, manifested their confidence that the B.M.A. will put forward the views of the profession with tenacity. The Negotiating Committee will now press hard for amendments in the Committee stage of the Bill in the knowledge that only a reasoned approach to the problem is likely to yield results. When the final result emerges in the shape of an Act the Council of the B.M.A. may decide to take a referendum of the whole profession. It will then be for each medical man to make up his own mind and reach his own judgment on the principal issues before him. It is not a responsibility he will be able to pass on to the B.M.A. or any other medical organization.

The Minister of Health's speech was fully reported in last week's *Journal*, and this week we publish accounts of the debates in Parliament, Panel Conference, and Special Representative Meeting. The attitude of the medical profession was summed up by Dr. Dain when he said: "they approved the aims of the Bill and some of the methods, but there were other methods of which they strongly disapproved." Here is a basis of agreement between the profession and the Government; this is important and should not be forgotten in the heat of disagreement over some fundamental points. Dr. Dain pointed out that many of the 74 clauses in the Bill gave power to the Minister to alter by Regulation what he wished to alter. Whatever fair promises may be made now, no doctor can feel easy about the future if such absolute power is put in the hands of a Minister presiding over a Department of Government with which the profession has not had a happy relationship. The power of the Ministry must, in the professional view, be limited, not unlimited. To give it unlimited power through the State ownership of all hospitals is to risk imposing uniformity—and indeed mediocrity—in a field of medicine in which variety has been the stimulus to progress. Three of the Labour speakers in the Commons debate showed their uneasiness on this score. Some consultants who have been appeased by the Minister's concession to the teaching hospitals appear to have forgotten that the Minister is to own them, appoint their Governors and Chairmen, and seeks power to alter by Regulation their procedure and composition at will. The Representative Meeting defeated an amendment approving of the transfer of hospitals by 210 votes to 29, thus bringing itself into line with the three Royal Colleges. By 229 votes to 13 the Meeting declared for the continuation of the right to buy and sell practices. This was a vote for the continuation of professional independence, for the right to own the means of livelihood. Linked with this was the opposition to payment partly by salary and to the power of direction by the Medical Practices Committee. On the positive side there was a strong plea for bringing the general practitioner into hospital work and for improved diagnostic facilities.

To sum up, the Negotiating Committee will press for amendments to make the Minister's power less absolute, retain the local ownership of hospitals, retain the system of payment by capitation fee only, continue the custom of buying and selling practices, and introduce the Health Centres by trial and not by a statutory duty laid on local health authorities. The profession will fight for elbow room to develop and will oppose an administrative structure which in some respects is too much like a strait-jacket.

A MILESTONE IN PHARMACOLOGY

The first number of the *British Journal of Pharmacology and Chemotherapy* has just appeared as a new member of the series of journals dealing with the progress of knowledge in special departments of medicine, for the publication of which the Association has accepted formal and financial responsibility. The new journal is edited by a Board of leading pharmacologists, working in academic, Government, and industrial research institutions, with the addition of the Editor of the *British Medical Journal*. Prof. J. H. Gaddum, F.R.S., of the University of Edinburgh, is Chairman of the Board, and Dr. H. R. Ing, of the Department of Pharmacology at Oxford, is the Secretary. All who are interested in the progress of medical science in this country will greet the appearance of this new journal as a sign that pharmacology in Britain, later than in some countries, has made good its claim to maturity and independence among the sciences which contribute to medicine. Not that British workers had failed in earlier years to make their contribution to the investigations and discoveries which have achieved recognition as classics of pharmacology and therapeutics. Those due to Withering, Ringer, Brunton, and Fraser need only be cited in evidence to the contrary. It was rather that in this country, and in England more than in Scotland, as Sir Henry Dale suggests in the Foreword he has written to the new journal's first number, there was hesitation in according to pharmacology the full academic recognition and status which it had long enjoyed elsewhere. This it had achieved conspicuously in Germany, under Buchheim, Schmiedeberg, Binz, Boehm and their followers, and even in the United States of America, where J. J. Abel established the tradition which he had carried back from Europe, and more particularly from the school of Schmiedeberg. If we look for reasons for this hesitation we may suspect a connexion with the attitude of scepticism, prevalent in English medicine well into the present century, as to the real value of all but a very few of the medicinal remedies till then available for prescription. And, indeed, for the best of these it was seldom possible to claim that they would do more

than relieve symptoms, and help to keep the patient quiet and cheerful, so as to give Nature as free a hand as possible in the removal of the cause of his trouble. As for the medicinal substances with which pharmacological investigation chiefly concerned itself in those days, these were very apt to be chosen rather for the definiteness of their action, and for its accessibility to finer physiological analysis, than for any conviction as to their therapeutic importance. So it came about that many of the drugs which were regarded as most attractive for study by the pharmacologist owed their interest rather to the light which their actions were beginning to throw on problems of fundamental physiology than to their special importance in practical therapeutics. Those who were clinical students in those days will not fail to remember the air of cynical discouragement which some of the ablest physicians then adopted to most of the medicinal treatment at their disposal, and the aloofness of the teaching in the wards from what the pharmacologist was studying in his laboratory. This situation was accentuated for the time, rather than alleviated, by the appearance of early representatives of new kinds of remedies having nothing to do with the traditional materia medica, or with the conventional pharmacology concerned with these, originating in the discoveries of physiology and immunology—hormones, immune sera, and vaccines, remedies dealing directly with the causes of various disorders.

It was under these conditions that the desire arose for a new kind of impulse in pharmacology, and that the genius of Paul Ehrlich was found to give it direction, system, and a new name, "chemotherapy," to distinguish it from the pharmacology which he had found too academic for his practical aim. This aim was the discovery of new, artificial substances which would deal directly with the causes of infection, and would do so better than the few among the traditional remedies to which such an action could be attributed. The success of this campaign has produced one of the most dramatic among the many great changes in medical science and practice which the present century has witnessed. Salvarsan, germanin (suramin), atebrin (mepacrine), the sulphonamides, and now penicillin, represent wave crests on the rising tide of its achievement. With this successful exploitation of the products of synthetic chemistry for the direct removal of the causes of infection there has been a parallel activity in the provision by synthesis of new and better remedies for the alleviation of symptoms, which must still remain an important if secondary concern of treatment. In all directions pharmacology, with its vigorous offspring chemotherapy providing the scientific basis of medicinal treatment applied in a new atmosphere of well-grounded confidence, has moved into the centre of interest in medical research. It is well, then, that British pharmacologists should have their own journal, to give to the world the results of the growing volume of pharmacological researches which the universities, the Government, and industry may be expected to support. They have hitherto found hospitality for their publications in the journal which Abel founded in Baltimore, as well as in the weekly medical journals, and those devoted primarily to physiology and to pharmacy in their own country. Their researches have surely attained an importance justifying a special journal to give them to the world, and the new venture should receive a hearty welcome. Its first number represents a full range of pharmacological interests, containing papers which deal with the elucidation of physiological problems by pharmacological methods, with new remedies for symptomatic treatment, and with others for chemotherapy in the stricter sense.

POST-MORTEM FINDINGS IN PREFRONTAL LEUCOTOMY

The operation of prefrontal leucotomy is still in an experimental stage. It has had some brilliant though partial successes. In the catatonic schizophrenic, violence and aggression that have persisted for years have given place to quiet and relatively human behaviour; and the chronic melancholic who has proved refractory to convulsion therapy has been restored to a state of well-being by having the white fibres of his frontal lobes cut. These benefits have had to be paid for with a diminution of some of the higher faculties, and in many cases the anticipated benefit has not been achieved. One of the most serious disadvantages of the operation has been the unpredictability of the results. It has long been recognized that this is partly because the operation is a blind one, and the extent and location of the intended destruction of white matter are not controlled. Post-mortem investigation of anatomical changes and their correlation with degree of improvement have been badly needed.

A beginning in this direction has now been reported by Meyer and Beck.[1] They have investigated 9 such cases, with a tenth in which frontal lobectomy had been carried out for basal meningioma in a mentally normal patient. In 4 of these patients—3 schizophrenics and one psychopath—clinical improvement over 8–36 months was considerable, and death eventually occurred from unrelated causes. Two patients died within a week of the operation, and the other three showed no improvement; in one of them the improvement obtained was offset by a severe frontal lobe syndrome. The extent of the surgical lesion varied very greatly from case to case, and in the patients who improved tended to be less than in the others. In one case marked improvement resulted from a unilateral operation, and in another case with a good result the prefrontal region had not been involved. Extensive haemorrhage and a too posterior cut yielded unfavourable results. It seems that patients chronically ill and with much deterioration of personality did less well and required a more extensive severance of the fibres than others. Considerable improvement may take place without cutting the fasciculus cinguli or other midline structure, which had been considered by Freeman and Watts to be of importance in relation to recovery.

Pathological examination has disclosed interesting anatomical findings. Retrograde degeneration of the dorsal medial nucleus of the thalamus occurred in all cases in which thalamocortical fibres had been severed. Owing to the varying extent of the operation it was possible to gain detailed knowledge of the organization of the thalamocortical radiation, which, it was learned, is in the human brain similar to that in apes. Evidence was obtained that the thalamic radiation to the orbital areas of the prefrontal region is of considerable strength. In the prefrontal cortex anterior to the cut there was a slight reduction of the

[1] *J. ment. Sci.*, 1945, **91**, 411

number of nerve cells, particularly of the third layer. The centre median nucleus of the thalamus, which is thought to serve as a purely thalamic association centre, varies greatly from subject to subject, both in the normal and in the abnormal, and its possible significance to psychiatry calls for study.

The work of Meyer and Beck is of high interest to the neurosurgeon and the psychiatric therapist. But the chief lesson to be learned is that the operation of prefrontal leucotomy is a human experiment in which further study is urgently required. The brain of any patient who dies and is known to have had a prefrontal leucotomy should, wherever possible, be sent for examination to a recognized centre for neurohistology.

UNIFICATION OF PHARMACOPOEIAS

In May, 1945, when victory was won in Europe, the Health Organization of the League of Nations published an interim report[1] of a technical commission of pharmacopoeial experts on the steps which have been taken towards an International Pharmacopoeia. The project sounds as full of hope, and presents much the same difficulties, as that of setting up a United States of Europe. Not that there is difficulty in peacetime in getting an international committee together, but to persuade those of any nationality to surrender their own pet pharmacopoeial habits for the common good is a large undertaking. The Health Organization has, however, been very successful in the closely related field of biological standards, and the present report, published at the moment it was, augurs well for success in this field too.

It describes the conferences which have been held since 1902; these were responsible for the First and Second International Agreements for the Unification of the Formulae of Potent Drugs. The technical commission of pharmacopoeial experts was set up in 1937; it was formed after negotiation with the Belgian Government and in liaison with the International Pharmaceutical Federation. It has as its chairman Dr. C. H. Hampshire, the secretary of our own Pharmacopoeia Commission, and among its members is Dr. Fullerton Cook, representing the United States. It has produced what is in effect a skeleton pharmacopoeia containing no fewer than 47 monographs, all approved by the representatives of seven different countries. It gives a list of about 160 more substances at present being studied. This is an important achievement which should go far to convince those doubtful of the practicability of an international book of this kind. The need for it may perhaps not be fully realized here, but in Canada, for example, some unification of the *B.P.* and the *U.S.P.* would prove a godsend to the pharmacists who have to keep in line with both.

ATOMIC ENERGY IN MEDICINE

Prof. M. L. Oliphant, who was associated with Lord Rutherford in his early work on atomic disintegration, delivered the twenty-fifth Silvanus Thompson memorial lecture—Rutherford himself had delivered the first—to the British Institute of Radiology on April 11, and discussed, with due regard to the secrecy which still hangs over the subject, the uses of atomic energy, especially in biology and medicine. By the bombardment of atoms by protons and deuterons, he said, it was possible to transform almost every chemical substance, changing it into a radioactive species possessing the property of emitting negatively charged electrons or alpha particles. The tracer elements, as they were called, were likely to play a great part in unravelling the complicated chemical processes which went on in biological phenomena. Some outstanding work had already been done whereby carbon dioxide was shown to be utilized by plants and the method of its transformation into sugars and cellulose, the structural material of the plants themselves, had been disclosed. There were now radioactive species of every chemical element in the periodic table, though it was true that some of them were not very useful, either because their life was far too short or their half-life times far too long. Most of them emitted negative electrons; one or two emitted positive. The process of splitting or fission of uranium was accompanied by a tremendous release of energy. The lecturer described experiments in the New Mexican desert, where, after the explosion of an atomic "bomb," an enormous area was depressed like a bowl and the sand became fused and took on a red colour, as evidenced in some specimen particles he handed round among the audience. The release of neutrons during such an explosion would sear and scorch everything with which they came in contact, and anyone exposed at a distance even of several miles might receive a lethal dose of radiation. Using the material in the form of sprays, it would be possible to contaminate, as if by poison gas, many hundreds of square miles of an enemy territory.

So much for the new plaything of the warmongers. On the other side of the account certain of these fission products, with a radioactivity very similar to that of radium, might be harnessed to industrial and clinical uses. The biological effect of the neutron was about five times that of the gamma rays of radium and gave the same kind of physical effect—namely, ionization. Prof. Oliphant exhibited plans of apparatus for the production and distribution of these radioactive materials for agricultural, chemical, metallurgical, and clinical uses. The centres, he said, should preferably be based on a university, with laboratories for the production of radioactive materials in the form required for these purposes. With what was known as the Harwell pile, consisting of rods of uranium arranged in lattice form, the spaces between the rods being filled with a substance like graphite, it was possible to generate the equivalent of 30 curies or more a day. Nuclear physics, he said, had now developed until it was ready to become a source of radioactive materials in almost unlimited quantities. Sources of neutrons were available which, because of the peculiarity of the ionization they produced in the tissues, were worthy of full investigation as alternatives to *x* rays and radium. It was possible to make a very good substitute for radium, and to produce it in immense quantities far beyond the world's radiotherapeutic needs. Prof. Oliphant concluded his lecture with the remark, "I think the indications are that the price of radium is going to fall."

We regret to announce the death in New York at the age of 83 of Dr. Simon Flexner, the distinguished bacteriologist and Director Emeritus of the Rockefeller Institute for Medical Research. He was a Foreign Corresponding Member of the British Medical Association.

The next session of the General Medical Council will open on Tuesday, May 28, at 2 p.m., when the President, Sir Herbert Eason, will take the chair and deliver an address.

[1] *Bulletin of the Health Organisation of the League of Nations*, vol. XII, Extract No. 4, 1945–6.

THE PUBLIC AND THE BILL

DR. HILL'S ADDRESS AT GOLDERS GREEN

A largely attended public meeting, arranged by the Hendon Division of the B.M.A., was held at Golders Green Hippodrome on Sunday, May 5, when an address on the National Health Service Bill was given by Dr. Charles Hill, Secretary of the Association. The chair was taken by Sir Alfred Webb-Johnson, P.R.C.S., who was accompanied on the platform by the officers and other prominent members of the Division. Some 1,500 people were present.

The chairman said that the profession as a whole was behind the objective of this and previous Governments in seeking a comprehensive health service, but felt that objection must be taken to some of the proposals. The general practitioner, so long as there was free choice of doctor, built up goodwill in his practice, but one of the proposals was that he should be entitled no longer to regard that goodwill as his own. The tribunals to be set up might deprive a practitioner of the right to accept public patients, although the General Medical Council retained his name on the *Register*. The practitioner, if not already established in an area, was required to obtain permission to practise in it, yet ever since Magna Carta it had been the right of the citizen to follow his employment how, when, and where he wished. The proposals amounted to this, that the Minister had power to create an absolute State monopoly of practice. (A voice: "About time, too.")

Surrender of the Hospitals

Dr. Hill dealt first with the hospital proposals. The Minister of Health, in his opening speech on the Second Reading—a speech which in large part was statesmanlike and conciliatory—had surveyed the hospital position, and with much in his diagnosis all would agree. There was need for the marriage of voluntary and council hospitals into one service which would represent the best features of both. It was desirable to have groupings of hospitals in natural hospital areas, and to make available to all hospitals the resources, financial and other, which they needed. With social security provisions it was inevitable that the bulk of hospital income should be derived from central and State sources. They agreed with Mr. Bevan that hospital development must no longer be at the caprice of charity, and that it was a State responsibility that a complete and efficient hospital service should be available to every member of the community. The Bill proposed to set up a regional organization covering natural hospital areas, and including council and voluntary hospitals alike. That was something for which the medical profession had been pressing for years—that hospitals should be organized over wide areas, unrelated to the antiquated boundaries of local government. By virtue of the power of the purse, of being the source of the great bulk of hospital income in the future, the Government would be possessed of an enormous influence—of all it needed—in the planning and development of the hospital service. But the Minister proposed also to become the owner of every hospital in the country.

"Is it necessary and desirable, that position having been reached, that the State should become the physical owner of every hospital? A hospital is something more than a place in which expert work is done. It is a living entity, a centre of local loyalty and affection. The essence of a good hospital service is that there should be local interest in it and responsibility for it. Will that continue if the State becomes the physical owner of the hospital? That is an issue for us all to ponder. Will the conversion of every institution into a State establishment improve the quality of the hospital service? Will the L.C.C. hospitals—a brilliant example of local authority development—be better hospitals if the responsibility for them is transferred across the river to Whitehall? Is there sufficient evidence of the wisdom, humanity, and capacity of the State to justify the abolition of the local character and ownership of hospitals? Is this gamble one which in the public interest we are justified in taking? The endowments of voluntary hospitals other than teaching hospitals will pass, via the Minister, to the region. Local hospitals, other than the teaching hospitals, will not be permitted to accept or hold endowments. It will be no longer more blessed to give than to receive."

Further, the Minister will have power compulsorily to acquire any non-State hospitals or nursing homes that exist or may be established. This will mean a State monopoly of hospitals, free from comparison with non-State hospitals. These things are neither necessary nor desirable.

General Practitioner Proposals

Turning to the general practitioner proposals, Dr. Hill asked what should be the basic principles of a family doctor service. Was it essential to a good service that the individual citizen should have the right to choose and change his doctor? The view of the medical profession generally, and, he believed, the public, was that this was essential. There were those who pointed out that free choice of doctor was not always available, and some who said that the public was incompetent to evaluate the individual doctor, judging a doctor by the number rather than the meaning of the letters after his name, or by social and sartorial considerations. But the individual citizen was better able to judge the value of the individual doctor in an essentially human relationship than an official or committee in a town or county hall. It was necessary with this personal service that the obligation of the doctor should be to his patient, and not divided between the patient and some employing body.

After outlining the proposals of the Bill concerning appointment to areas, payment in part by salary, and creation of health centres, Dr. Hill took up the statement of Mr. Greenwood, in the Second Reading debate, concerning a housing estate for 34,000 people near Bristol, with no doctor—a situation which Mr. Greenwood had compared with Taunton, a town of 40,000 people, with 56 doctors. It was always necessary to look into the facts of a situation before accepting a statement at its face value. Doctors had endeavoured to find houses on that housing estate, and had been told by the Bristol authorities that no houses large enough for conducting medical practice were available. There were actually nine doctors within a mile of the estate, four of them with branch surgeries within the estate itself. As for Taunton, its doctors went far and wide into the rural parts of Somerset and other counties. So much for that illustration of "maldistribution."

Under the new arrangement sons would have to obtain special permission to follow their fathers in practice. Where there was more than one applicant for a vacancy the central committee would decide which should go. It would decide, for example, whether to a particular area a man or a woman practitioner should be sent. It would decide who should join a group or partnership. The contention of the profession was that such errors of distribution as existed would, with a 100% service and payment in respect of every member of the community, be largely evened out. In areas of particular difficulty, including rural areas, the terms and conditions of service could be so adjusted as to attract doctors. The Minister had the power in an area which remained persistently under-doctored to select, appoint, and pay a doctor.

"We want to avoid the situation that a man or woman, after years of arduous study, and after being recognized as a fit and proper person to practise medicine, finds himself or herself debarred from the area of choice. Mr. Bevan has described the procedure as 'negative control,' which does not seem very different to some of us from direction; by closing certain areas to doctors they will be forced into other areas."

The Finance of it All

It had been said that the sale and purchase of practices was equivalent to the sale and purchase of patients. That was not true. Even though a practice changed hands as between two practitioners there was nothing to compel the individual patient to transfer to the incoming doctor. The Government argument was that in order to secure a better distribution of doctors the abolition of the capital value of practices was necessary. There was no need for this change. If goodwill was abolished, clearly compensation should be paid. But why should £66,000,000 of public money be spent to destroy this form of ownership, unless, indeed, it was felt that this was what stood between the independent doctor and his conversion into a branch of Government service? As for salary, the Minister told the Negotiating Committee in writing that a substantial proportion of the doctor's remuneration would be by basic salary; in the House he said a small proportion. It was to be hoped that the Minister was in process of modifying his view on this important issue. The profession believed that the general practitioner's success should depend on the number of

persons who chose him, and that according to that number he should be rewarded.

It was a pity that the health centre had become the focus of so much controversy. The idea was first put forward by the medical profession. It was an interesting and useful notion, worth trying out in the circumstances of different areas. But it was foolish to pretend that by the use of the mystic words "health centre" an effective contribution had been made to the country's health services. The health centre had disadvantages as well as advantages, including loss of privacy. There was always danger that the organization would submerge the individual, that there would be such efficiency in administration as to plan out of existence the human and personal factor in the doctor–patient relationship. The health centre might degenerate into the bad out-patient department at its worst. But let there be widespread experiment. The health centres now proposed were in essence aggregations of doctors' surgeries, not special diagnostic centres to bring to the elbow of the family doctor the facilities of which he stood in need.

Sum Total

What did these proposals in the field of general practice add up to? The conversion of the medical profession sooner or later into a whole-time salaried service under the State? In the public interest the great majority of the profession were opposed to conversion into a technical branch of the Civil Service. (Applause.) Did these proposals point in such a direction? What is the evidence? The Minister, in the Second Reading debate, said that the profession was not ripe for a whole-time salaried service. "There is all the difference in the world between plucking fruit when it is ripe and plucking it when it is green," he said. The remark reminded one of *As You Like It*:

> "And so, from hour to hour, we ripe and ripe,
> And then, from hour to hour, we rot and rot:
> And thereby hangs a tale."

It was the "tale" they were anxious to discover. Mr. Greenwood, in reply to an Opposition question, said that he adhered to the Labour Party policy (a whole-time State salaried service) put forward in 1943. What *was* the Government's policy? The country was entitled to know. The Parliamentary Secretary of the Ministry of Health has placed beyond all doubt what the policy of the Labour Party meant to free choice of doctor. He had said in the debate that "a full-salaried service is inconsistent with free choice of doctor." But the Government seemed to be committed to both.

Finally a reference should be made to the wide powers given to the Minister under this Bill. Out of 74 clauses 29 empowered the Minister to make the regulations which were the flesh of the scheme, the Act being no more than its skeleton, and most of the regulations became law from the moment they were laid on the table of the House, needing Parliamentary action to annul them.

Dr. Hill said in conclusion:

"The medical profession approves the objective of this Bill. It is entitled to be heard, considered, and consulted in the working out of the scheme, for without its co-operation no effective scheme can be framed. It is itself committed to the extension and improvement of health services. It has been pressing for these for many years, long before politicians of any party thought that the health service was a subject to be tackled. It welcomes, too, the conciliatory way in which Mr. Bevan put forward his proposals, especially remembering the temptation he must have been under to use that rhetoric and invective of which he is a master. We hope that in the Committee stage he will make such changes as will secure, within the general objective, the essential freedoms—for the patient, for the doctor, for the local hospital—for which we ask, and so gain support of the medical profession.

"The resources and organization of the State are necessary for medicine. There must be no economic barriers between the people and the medical services. But are we, in such planning, to evolve a form of service which will convert the independent doctor into a servant of the State, replacing his responsibility to the patient by responsibility to some superior body? The dilemma is whether within State organization there can be maintained not only the freedom of the public, but freedom, intellectual and other, for the doctor, freedom for his professional capacity and experience to develop. Does our experience lead us to believe that the State as we know it to-day is so wise, so omniscient, so providential a depository of human wisdom as to justify the handing over to it in their entirety the hospital and personal health services of this country?

"My experience of our Civil Service is that it is headed by men of great ability and incorruptible integrity, but with sometimes just a slight lack of elasticity. (Laughter.) Is there not a real danger of a service so personal being submerged by administrative regulation and control? There is enough to make us hesitate whether the public interest of a better health service will be served if an independent profession is converted into a technical branch of government. That is the issue which confronts us at present."

The Turn of the Audience

The opportunity for questions was eagerly taken and sometimes, owing to the peculiarity of the auditorium, two or three questions were being asked at once. The first question was, "What are the plans of the B.M.A. for the better direction of practitioners?" Dr. Hill replied that the Association had no plans for direction, but only for a better distribution. Where there was inequality of distribution it was largely due to the poverty of areas or to thinness of population. In unattractive areas, urban or rural, the Minister by adapting the terms of service could attract into such localities the needed practitioners. If there still remained undoctored areas he could directly appoint practitioners. Indeed, the right to make such appointments had existed for thirty years under N.H.I., and had only once been exercised. "What we do not believe to be right is that in every case of a practitioner seeking to settle in an area he should be required to obtain permission of a Whitehall committee."

Asked whether the results of the General Election did not show that the people wanted this measure, Dr. Hill said that it was for the people to determine whether in voting for this Government they explicitly committed themselves to these proposals. In the election manifesto of the Labour Party *Let Us Face the Future* no reference was made to a whole-time salaried service under the State for general practitioners, nor to the conversion of hospitals into State establishments, though, to be quite fair, the statement of Labour Party policy issued in 1943 was clear-cut on this issue. But even if they voted Labour at the election they had as citizens every right critically to examine these proposals.

"If we agree with Dr. Hill how are we ordinary people to do anything about it?" Dr. Hill replied that, clearly, the Parliamentary situation was a commanding one. At the same time there were indications that Mr. Bevan did not desire or intend the extreme courses which some of his supporters would have him pursue. The individual citizen should study the proposals, make up his mind for himself, talk about them to his friends, and write to his member of Parliament expressing his considered view.

In reply to another question Dr. Hill pointed out the cursory reference to research in these proposals. The money spent by the State on medical research at present was one-tenth of 1% of the cost of human disease. Another questioner asked whether Dr. Hill or the President of the B.M.A. was speaking the Association's mind, as, according to a press report, the President had expressed himself as welcoming the Bill. Dr. Hill said that he presumed the questioner was referring to a report in the *Daily Express*—a brief report of 10 or 12 lines of a statement said to have been made by the President. It was an abbreviated report, inevitable in the small newspapers of to-day. "A similarly abbreviated press report of what I have said to-day might put me in the same position. I am an officer of the British Medical Association," Dr. Hill continued, "a democratic body, which obtains and represents the views of the great majority of the medical profession, and my job, which I gladly undertake, is to express the views of that body."

On a final question about the hospital position Dr. Hill said that he thought their aim should be, not to try to save the voluntary hospitals as such by a crusade, but to see to it that the State exercised its powers of co-ordination in such a way that the individual character of these hospitals was maintained. "Do not by one sweeping blow convert them into State hospitals without making it certain in your own mind that it will be for the public good." There was a danger that under a State system people of original mind—those temperamental, untidy, unpunctual people—who had contributed so much to medical know-

ledge and so to human welfare would find it too difficult, or would be judged by others as too difficult, to remain in the service. Yet it was important to keep these people, and not just to have in the future a profession of people who might think it better to lie low, to pass the buck, to think of superannuation.

Sir Alfred Webb-Johnson, in thanking Dr. Hill for a magnificent speech, referred to the great achievements of Anglo-Saxon medicine—the development of anaesthesia and the working out of antiseptics in an earlier generation, the discovery of insulin nearer our own time, and of penicillin to-day—and asked whether it was likely that the medical profession would come to the people of this country with cheap and tawdry considerations or considerations of self-interest. What they were anxious to ensure was the continuance of that atmosphere of freedom which had produced these and innumerable other achievements. Although he was the son of a general practitioner, he had been divorced from general practice for nearly fifty years, but he had never been more proud of his colleagues engaged in general practice than he was to-day. They had before them the lure of the £66,000,000 for compensation, they had the assurance of State employment with good remuneration and the promise of pension on retirement; yet they had turned from all these things, rejecting the temptation, and valuing their freedom before them all. That made him proud of the men in general practice, and he thought the British public should be proud of them too.

On the following day, May 6, Dr. Hill addressed his twelfth public meeting since the publication of the Bill, attended by more than 2,000 people in the City Hall, Newcastle. He is speaking at Colchester on Thursday, May 9, and later in the month at Hastings, Chester, and Glasgow.

Correspondence

The Health Service Bill

SIR,—In the important leading article entitled "The Press, the Minister, and the Bill" (April 20, p. 612) two points appear to be open to criticism.

1. "The advances of medicine . . . are not in the clinical field but in the laboratory." This may be generally true, but what of the clinical researches of Jenner, Budd, James Mackenzie, and others like them? Further, when the advance has been made in the laboratory its value has to be tested by the clinician to ensure that apparent success is really consequential, not merely accidental. Here is opportunity for the general practitioner and his colleagues, either in the consulting-room, the patient's home, or the hospital associated with the health centre.

2. "The general practitioner does not so much want consultation with another practitioner . . . as with the . . . expert. . . ." Though this statement is correct it disregards the value of consultation with fellow general practitioners, a practice probably restricted by the apprehension of a competition that would not exist in a health centre. Many doctors must at times have found these consultations quite as helpful as, if not more so than, the formal meeting with a specialist, and for the benefit of the patient and the convenience of the doctor.

None will dispute that "the incentive to excel professionally needs an atmosphere of freedom." Does not the vocation of medicine not only demand but help to produce its own freedom? This, of course, is only made possible if there is enough time available for deliberation, for discussion, for observation of facts and events, for always in every case and every treatment to ask why. Twenty-five years ago the national medical service proposed conveyed no suggestion of any want of freedom, but need for financial reform forced medical reform into cold storage, until a few years ago these two reforms changed places. Unfortunately there is now a fear that the freedom needed for the useful development of medical reform may have been frozen so long that its life is in danger.—I am, etc.,

Westbury, Wilts. CHARLES E. S. FLEMMING.

SIR,—The quality of work of the able doctor of probity will not vary whether payment be by patient, by public authority, or not at all. In raising this issue in your pages Dr. Winifred Coppard (April 20, p. 622) has perpetuated much of the confusion of thought and false distinctions that are all too commonly displayed in the lay press. The only disadvantage of a State service for this kind of doctor will be the added difficulties and frustrations that arise from regulations designed for the less able and the less incorruptible doctor. Less able but still incorruptible doctors also will present no problem; they will automatically recognize their difficulties and, free from rancour and envy, will engage in more technical branches of the profession, or perhaps take up some other work.

Doctors are not, however, confined to these two categories. Able ones, as well as the less able, exist both of whom may be corruptible. Of these, the able ones will be few. On the face of it, medicine provides, for the able, freedom from financial stringency but very considerable difficulties in the way of achieving wealth. That able minds, in significant numbers, should choose the medical profession for the purpose of making money easily and quickly is inconceivable. By definition they are not so stupid. Once in it, perhaps through the choice of a parent, it is, of course, always possible that money may become the major concern. In private practice the temptation is then to indulge patients who make frivolous demands or to conceal unpalatable truths that might, if revealed, lead to the loss of a lucrative patient. Such men will not be saved by a salaried service where the patient's good will has no cash value. On the contrary, the patients will loose their one hold on the doctor's attention, while the doctor's main stream of energies will be diverted to obtaining the favour of superiors, whence rapid promotion and the higher salary rates may be expected. In general practice this good but corruptible doctor may be flashy, urbane, and hypocritical, but at present he does no great harm and sooner or later he is left with what he desires—the wealthy and comfortable patients. When, however, this same man becomes the clever but corruptible official, he is a menace to the service of which he is a member and to all who work under him.

Lastly there are the bad and corruptible doctors. By implication the enthusiasts for a State service seem to believe that a salary will make them good in both respects. No one, I imagine, would defend this contention seriously. At present in private practice the bad and corruptible doctor is continually having his harmfulness limited by patients who go to other practitioners. But once in a public authority service, there is no known means, other than by promotion, of depriving a man of his position unless he commits some serious offence. A policy of safety first and a diligent study of rules and regulations may save him from doing much positive harm, but the public will suffer from his incompetence, his colleagues will suffer from his jealousy and spleen, and the service will suffer from his inadequacy. Nothing can make him any better, but the security of his job and the knowledge of his deficiencies will discourage him from entering alternative employment. A State salaried service cannot make a bad doctor into a good doctor, or a corruptible man into an incorruptible one. It can substitute money-plus-power for money as an incentive for the corruptible; it may hinder and frustrate the good and incorruptible. It can never transform the bad and corruptible, but it can cherish and protect these from the consequences of unpopularity with their patients.

For persons of good will, especially when they are expressing indignation, it is fatally easy to attribute to those who disagree with them the basest of motives, not seeing in that very tendency the disguised (emotional) thinking of popular oratory and the popular press. Dr. Coppard, with the best of intentions, has not, I believe, realized the artifices of her own technique. It is urgently needed at this time that we should see through such artifices and cease fruitless maligning of each other. The truth is, there are good and bad doctors, good and bad men and women, inside and outside the salaried services. But while there are already salaried services open to all who prefer them, those who find such conditions inimical to their work are not for that reason greedy or corrupt. The basic question is whether the abolition of a system by which the patient himself is the final arbiter of his health problem is likely to favour either the health and welfare of the patient or the efficiency of the doctor.—I am, etc.,

London, W.1. H. C. SCOTT.

SIR,—I would beg a brief space to make a few remarks about the Bill. First, since we are certain of a State medical service let us all, whether we like the idea or not, throw in our lot for the advancement of medicine and the betterment of the health of the nation.

Secondly, it is fitting that practitioners should be free to remain outside the new service and continue private practice for that small number of patients who wish to refuse the services offered to them. But for those doctors who elect to participate in the scheme there should, I feel, be no private practice at all provided the salary, whether fixed or on a capitation basis, is sufficient to meet the reasonable expectations of practitioners. From my limited experience of general practice I have been led to believe that people think that panel are not treated so well as private patients, though the same doctor is consulted in each instance. Whether it is a definite policy of doctors to belittle the panel or not I cannot say, but the fact remains that many patients believe that the panel treatment and medicines are much inferior to those given by the doctor in a private capacity. Consequently, if under the National Health Service doctors are allowed to practise in a dual capacity many people will, I fear, be misguided enough to consult their doctor, or another doctor, "privately" when they think their illness is serious, fully believing that they cannot be treated efficiently under the National Health Service.

Thirdly, I fully agree with Dr. Cobban (April 27, p. 659) that a full-time salaried service will not destroy initiative. On the contrary, if the financial aspect is taken out of general practice, especially if my previous suggestion is adopted, one would have more time to devote to one's patients. This latter happy state will be reached only when sufficient doctors will have been trained to cope with the additional work of the expanded health services.—I am, etc.,

Medical School, King's College, Newcastle-upon-Tyne. J. STANLEY ELWOOD.

SIR,—In considering the National Health Service Bill several salient points must be borne in mind. Firstly, that the measure is as totalitarian as any ever conceived in Nazi Germany; and, secondly, that any policy of "appeasement" or procrastination will inevitably fail as it has done in the past when dealing with dictatorship, whether in Germany, Russia, or England.

The issue is clearly before each one of us in the medical profession. We must be united and make our stand now, before the Bill becomes law. We must use all our strength and our resources not to modify the Bill but to kill it.—I am, etc.,

London, N.W.10 R. M. AYTON-ORMSTON.

The Bill and the Way Out

SIR,—On a solution of the deadlock created by the Bill now before us rest the health of the nation and the hopes of our profession. The "way out" for both the parties concerned is to acknowledge their errors—the Minister his sin of commission and the profession its sin of omission.

The first mistake is that the Bill is born of party parentage—the Minister of Health and a party medical clique—whereas disease is common to all and health is coveted by all, regardless of political complexion. The Minister, being but a layman, has fatally ignored the fact that the brains and good will of the *whole* profession are essential in organizing our services. It is not remedied by the compensatory device of permitting private practice. This perpetuates the present evil of two types of practice and damns the Bill. People don't pay extra unless they are getting something better in return. Again, the Bill is doomed because the Minister, lacking "the goods" to give in exchange, proffers first-class service in return for the citizen's cash. The situation is ripe for a major social disaster—disrepute for his party and the degradation of a noble profession.

But what has the profession done? Hard work, yes; but no reorganization to meet the need of our time. We tried to plan before, and again early in the war, but, to our shame, the effort ended like a dismal six-months abortion. Our fault lies in offering nothing constructive in place of the Bill. Whereas the Minister's part is to provide the public with the medical service, the organization of our profession needs the technical knowledge of a highly complex science and subtle art and is outside the province of a layman. "The man who pays the piper calls the tune," but the patron of music does not presume to dictate the composition and disposition of the orchestra.

How can Mr. Bevan redeem the situation? By pronouncing the present premature proposals an interim measure. Let him allow free discussion and amend the Bill so that the few fine features, generally acceptable, remain—e.g., regional organization of co-ordinated hospital services and extension of N.H.I. to the whole family; while letting slide *pro tem.* revolutionary ventures like transfer of hospital ownership and prohibition of sale of practices. Now, when we can scarcely keep the engine turning over, even working 12 to 14 hours a day, is not the time to expose the medical machine to all sorts of new efforts and experiments. To plaster the hoardings with "Stop death on the roads" and raise the death rate from wrecking civilian medical service is glaring inconsistency. Let money be spent where we are sure of profit—on personnel and hospitals. Highly questionable ventures like health centres and cancer clinics might be given a five-years trial in one or two places. Having thus allayed the fears of both public and profession, let him then turn to the doctors—the technicians—and ask them to thrash out a first-class service and submit it to him and his party medical advisers for scrutiny. On that document and with the profession behind him, he would found and present a final Bill which would earn the undying gratitude of the public and bring unfading renown on him and his party.—I am, etc.,

Bristol. A. WILFRID ADAMS.

Approved Societies and the Bill

SIR,—There has been much correspondence from medical and lay citizens in the daily and medical press, both for and against the Health Service, but comment, favourable or otherwise, from the approved societies has been conspicuous by its absence. As they have had large control of medical benefit under National Health Insurance, one cannot help wondering what their reaction to the proposed Bill can be.—I am, etc.,

East Kilbride. J. MCLAREN.

The G.P. in Consultation

SIR,—There is one paragraph in your admirable leader entitled "The Press, the Minister and the Bill" (April 20), with which I cannot agree. This paragraph states that the general practitioner does not so much want consultation with another practitioner in a health centre as with the man who has expert knowledge he does not possess himself.

Now that the old-time general consultant has been gradually eliminated from professional life, it is left to the general practitioner to hold the last remaining stronghold of clinical medicine and surgery. In the view you express, and to which I refer, this last stronghold would soon fall. The whole trend of modern medicine is to pass the complaints of each and every patient through a series of water-tight compartments of mechanical and laboratory investigation, the while diagnoses and treatment are postponed for an assessment of the findings. These of themselves are seldom convincing or satisfying, least of all to a general practitioner. And I would submit that there is to-day a plea for the preservation of pure clinical status in medicine which is as strong as any plea for so-called professional liberty.

In war, in spite of all modern devices and aids to destruction, it is on man-power alone that final victory and ultimate peace depend. So, too, in disease it is on man-power expressed in terms of clinical knowledge and experience that the patient's progress and ultimate physical and mental state largely if not entirely depend.

As I see it one of the greatest advantages in the proposed scheme for a new health service is the opportunity it affords for general practitioners to collaborate closely not only with experts and their attendant facilities, but also—equally if not more important—with their fellow practitioners. Would you segregate individual members of the profession still further?

While I am on the subject of a National Health Service, might I suggest that the public be asked to consider the implications arising for them out of the following fact: There are some

patients a doctor would rather attend for nothing than others at a guinea a time.—I am, etc.,

New Buckenham, Norfolk. R. G. BLAIR.

*** We would certainly not advocate further segregation. On the contrary, we suggest that the general practitioner needs easier and quicker access to laboratory and hospital, and much closer contact with men having knowledge and experience in technical and special subjects.—ED., *B.M.J.*

Resistant Anaemia

SIR,—In reply to Squad. Ldr. A. G. Rickards's criticisms (April 27, p. 662) of our recent article:

1. The word "resistant" was used as a heading only, and not as a term of classification as he suggests. The subheading and first paragraph made it quite clear that the word was chosen to draw attention of readers to a common confusion of diagnosis, with consequent failure of liver therapy.

2. We are still of opinion that ulcers of the legs, such as we described, in association with anaemia, place the diagnosis of familial acholuric jaundice beyond doubt. The absence of any other local disease, such as venous varicosity, is, of course, assumed. If Squad. Ldr. Rickards can publish details of the one exception to this rule he has seen we hope he will do so, for the case would be of general interest.

3. He is under the "impression" that the colour index in acholuric jaundice is usually about or below unity. We stated that "the colour index is around unity or even above it. Less commonly . . . well above unity." In point of fact, in one case it was 0.9, in four it was 1, and in four it was above unity. Our emphasis was laid on the association of a relatively, or absolutely, high colour index with a small mean cell diameter.

4. We agree that the use of initials in place of names of diseases is, in normal circumstances, undesirable. We must point out, however, that in an article embodying repeated comparison between two diseases the frequent reiteration of the full names in each paragraph is wearisome to the reader. This fact weighed less with us than our deference to the demand of medical editors for the utmost brevity consistent with clarity. For this the squadron leader must blame the severe paper shortage, of which he will become aware on return to civilian life.—We are, etc.,

A. H. DOUTHWAITE.
London, W.1. R. L. WATERFIELD.

Iritis in the Rheumatic Affections

SIR,—I have read with interest the contribution by Prof. Arnold Sorsby and Dr. A. Gormaz entitled "Iritis in the Rheumatic Affections" (April 20, p. 597).

The problem of the aetiology and treatment of uveitis faces us in approximately one out of every hundred cases attending an out-patient department of an eye hospital. An elder colleague and teacher said to me recently that he thought he knew as much about uveitis to-day as he did forty years ago. From one whose published work always has the hall-mark of careful excellence, and whose name is now rich in honour, that was an understatement, of course. Nevertheless, our progress has been little. The clinical approach seems to be insufficient. Uveitis occurs in association with a multitude of diseases. The only common factor seems to be that there is an infection going on somewhere, and that the iris and ciliary body suffer from the effects at a distance, as it were. To say that it is a manifestation of bacterial allergy does not take us much further forward, but the evidence does increase to show that the tissues of the uvea, kidney, and joint membranes are specially sensitive to bacterial products. But Bright's disease and acute rheumatism are not commonly found together so far as I know, and certainly iritis is very uncommon in acute articular rheumatism, as the authors have shown from the literature. On the other hand, there is copious experimental evidence and some clinical evidence that the eye can be sensitized to foreign protein.

If we fail then, as we often do, to find a source of infection, what can we do to desensitize the patient? We use tuberculin in certain types of chronic iridocyclitis, often empirically if the truth be told. The results are impossible to assess in terms of anything like a controlled experiment. I find that my colleagues in general medicine use tuberculin very little. Can we do nothing to desensitize the body to the ordinary coccal infections? The fashion of vaccines seems to have died. This is not a plea to resuscitate them, but a plea for the bacteriologists and serologists to help us to make some real advance in the study of uveitis. Doerr has an attractive hypothesis for the mechanism of immunity and allergy. He suggests that the difference between the normally immune person and the immune and hypersensitive person might simply be that in the former there is plenty of circulating antibody, while in the latter, or hypersensitive person, circulating antibody is deficient and antibody is being engaged in the tissues themselves. Is immunity as specific as sometimes it has been thought to be?

These are some of the speculations that arise on thinking of iritis, and they are quite frankly beyond the clinician to do anything about. It is a long-term job for a team. It is interesting that the salicylates so long used in this disease and in rheumatism seem to reduce hypersensitivity experimentally.

In the terms of their paper the authors say, "In an attempt to assess the frequency of iritis in the rheumatic infections, 815 patients suffering from various forms of rheumatism were examined for evidence of active, or past, iritis. As these patients were seen at clinics for the treatment of rheumatic infections, or in the wards of general hospitals, slit-lamp examinations could not be carried out, and only exceptionally was a mydriatic used. The eyes were inspected through a loupe under focal illumination; posterior synechiae or inflammatory pigment deposit were taken as evidence of past iritis."

Prof. Sorsby says no mydriatic was used in examining his 815 patients for evidence of past iritis. Is he convinced that he has not missed some cases of old iritis by omitting the use of a harmless mydriatic? The most accurate statistical analysis and the most rigid application of tests of significance would be vitiated if this were so.—I am, etc.,

Glasgow Royal Infirmary. IAN S. MCGREGOR.

Ocular Decompensation

SIR,—An article in the *British Journal of Ophthalmology* (April, p. 232) by Major E. M. G. Galton, R.A.M.C., draws attention to the change of attitude which has taken place in recent years towards the significance of refractive errors, anomalies of accommodation, and abnormalities of muscle balance. These conditions should no longer be regarded as errors which need necessarily be corrected for themselves. Ocular function being dynamic in nature, Major Galton suggests that we should adopt the language of the cardiologist. When a patient with a refractive error develops from it symptoms which he did not have before, we should say that he has become "decompensated," thus implying that he may again become "compensated," or symptom-free; and he points out that many of these cases can be treated without glasses.

Unfortunately, though the attitude of ophthalmologists to small errors may have changed, their practice towards patients has not. (By "patients with small errors" I am referring to all those whose unaided vision is adequate but who complain of headaches, tired eyes, or other symptoms brought on by particular use of the eyes.) Generally speaking, such patients are still ordered glasses if they are civilians, or are told firmly that they do not require glasses if they are in the Army. They are not offered any other form of treatment. Seeing that alternative treatment for the relief of symptoms does exist, this means that many people are still ordered glasses unnecessarily. It is not only the optician who shows an inability to refuse glasses to any patient who comes for them.

Stutterheim showed that most of these patients have a deficiency of convergence, and described an excellent technique for convergence training. Also, I personally have found that the principles of relaxation and proper use of the eyes described by the late much-maligned Dr. Bates are definitely helpful in treating these cases. By a combination of these methods, it is my experience that there are very few such patients who cannot be "compensated" for their errors (that is, made comfortable) without the use of glasses. In the *British Journal of Ophthalmology* for December, 1937, the reviewer of Stutterheim's book, *Eyestrain and Convergence*, wrote: "There is no doubt that Stutterheim has blazed a new trail in ophthalmology." It is a trail which few have followed, presumably because the treatment requires time and patience. The refraction has got to be done in any case, and, having done it, it is so much easier

to order glasses than to embark on unfamiliar treatment (which should, of course, be carried out by the orthoptists).

Is it not time that an enterprising eye hospital expanded its squint department for the treatment and critical study of these cases of "decompensation," to enable us to avoid the unnecessary and unphysiological prescribing of glasses for small errors, by having a better alternative for the relief of symptoms?—I am, etc.,

London, N.W.6. RONALD KERR.

Physical Therapy in Mental Disorder

SIR,—This correspondence, dealing as it does with matters of a highly controversial nature, has followed the usual course of such discussions, but the amount of ill-informed comment has exceeded that usually found in a scientific journal. Most of the writers have used the words "physical" and "psychological" as antitheses, and those who have dared to suggest that the two methods may be combined have been more or less ignored.

Dr. D. Waterfield's letter (April 27, p. 664) prompts me to enter the controversy, even at this late stage. His statement concerning "these fellow creatures, because of the very nature of their malady, are the only members of the community who are incapable of voicing their grievances" is not only misleading but is completely inaccurate. The reference can only apply to certified psychotic patients, who, in most of the modern mental hospitals, form a very small proportion of those "subjected" to E.C.T. In this hospital we have, for the past five years, been using E.C.T. on a large scale, in both psychotics and psychoneurotics, and, contrary to the experience of Dr. Ian Skottowe (April 6, p. 548), we have been very impressed with the results, which, incidentally, are not assessed with reference to the admission/discharge rate. I am sure that Dr. Waterfield would not seriously suggest that a chronic hypochondriac (many of whom we have treated successfully) was incapable of voicing his or her grievances!

It would seem, also, that Dr. C. G. Learoyd (March 30, p. 505) is labouring under a misapprehension regarding the Board of Control, which, contrary to his underlying suggestions, is very well informed concerning the use of this form of therapy in the many hospitals under its jurisdiction. Neither Dr. Waterfield nor Dr. Learoyd is a psychiatrist, but it is, to say the least of it, disconcerting to note the statement of Dr. I. Atkin (March 2, p. 328) that "anyone can quickly learn the technique of E.C.T." If he means that it is easy to acquire a knowledge of operating the machine, I am in complete agreement; but, then, it is also easy to inject evipan or pentothal into the vein of a patient. It does not follow, however, that the technique of narco-analysis can be quickly mastered, merely because the manipulation of the syringe calls for no great experience.

I would submit, Sir, that the technique of E.C.T. (as opposed to merely "pressing the button") requires extensive experience if uniformly good results are to be obtained. The dosage used in each case should be assessed in the light of the original clinical findings and modified according to the response produced. The correct degree of confusion required is a matter for fine judgment, and this can be attained only after long familiarity with the method. Dr. Atkin's reference to the training of psychotherapists, taken in conjunction with his remarks on E.C.T., would suggest that he does not entertain the idea of combining the two methods. I would go so far as to say that this is essential, for, during the recovery period, the patient does require psychotherapy if lasting results are to be obtained.

Many correspondents have raised the spectre of fear in reference to E.C.T., and it is high time that this was laid, once and for all. Fear is not a normal concomitant of the treatment unless this is carried out by an inexperienced person who may not realize all the implications, although he may be quite capable of handling the machine with a certain degree of dexterity. It is true to say that the more imaginative patient may suffer from some degree of apprehension, but, in the same individual, this fear would undoubtedly precede almost any form of medical treatment. The apprehension engendered by the thought of E.C.T. is nothing compared with that found among patients in the waiting room of a dental surgeon, but it would be ludicrous to suggest that, because of this fear—amounting, in some cases, to panic—dental operations should be abandoned altogether. Such an attitude would be classed as ridiculous, yet many well-meaning correspondents express a precisely similar sentiment with regard to E.C.T.

In my opinion the introduction of E.C.T. is one of the greatest advances that has been made in psychiatry during this century. Its employment is, unfortunately, open to abuse, and this treatment should not be relegated entirely to junior medical officers, as is the case in some hospitals, but should be carried out with discrimination by, or under the direct supervision of, those experienced in its use.—I am, etc.,

Portsmouth. W. LIDDELL MILLIGAN.

SIR,—Quite a number of your correspondents do not seem to realize that the unpleasantness of E.C.T. can be reduced to a minimum. Premedication with scopolamine compound abolishes apprehension and promotes sleeping-off the fit, thus obviating recollection of the actual treatment.—I am, etc.,

Truro. H. PULLAR-STRECKER.

Air Disinfection by Iodine Vapour

SIR,—Your annotation on air disinfection (April 20, p. 614) dealt with a subject of very great importance. I was particularly interested in the work of Drs. Stone and Burnet, who found that iodine vapour in weak concentration (0.1 part in 1,000,000) inactivated the virus of influenza. I made the same discovery in a practical way thirteen years ago.

In December, 1932, I iodized the air in all the Chesterfield Corporation buses by my method. A month later a very severe epidemic of influenza spread over the country. About the middle of January half the police force were off duty in this town; about 60 hospital nurses were in bed with the complaint; and the industrial life of the community could be carried on only with great difficulty. But the bus employees were practically immune—only 6 away through illness out of 300.

The transport manager was so impressed by the result of this iodine experiment that he decided to adopt the method permanently. That was done, and each year the iodine diffusers are renewed. The cost, which is small, he regards as an economic proposition. He tells me that never once in all these years has any bus service had to be curtailed from the absence of the necessary staff through illness. I wonder if any other bus undertaking in the country can say that.—I am, etc.,

Kenwood, Chesterfield. JAMES A. GOODFELLOW.

Prevention of Transfusion Reactions due to Rh Factors

SIR,—In his valuable article on the prevention of transfusion reactions due to the Rh factor Dr. F. W. Gunz (April 20, p. 601) states that there are formidable difficulties in the way of the ideal—i.e., the Rh grouping of every potential blood recipient. He states that special laboratories are necessary for such a service as would undertake Rh grouping and the supply of Rh-negative blood for suitable cases. I can assure him that an ordinary laboratory such as this hospital boasts can and does undertake such work and supplies suitable blood to a number of hospitals and maternity homes in the area. This work is done at a trivial expense and with but a small addition to the work of our laboratory staff.

During the past two years nearly 4,000 Rh groupings have been made and many Rh-negative transfusions have been given, including three to erythroblastotic babies. Our routine is as follows:

Our transfusion service takes blood each week. ABO and Rh tests are done of each specimen. Rh-negatives are further tested for R′. All antenatal cases attending the hospital and those from the municipal antenatal clinics are ABO and Rh grouped and an entry made on the antenatal card, the blood taken for W.R.s providing specimens. This means about 60 or 70 such groupings weekly, but it is a simple procedure, and it takes no longer to put up the Rh test together with the routine ABO tests using the tube method described by Race and Taylor. Non-maternity cases which may require transfusion can be fully grouped on admission to the hospital and the appropriate notation made on the ward record card. Both "O" and "A" blood is stored, and should transfusion be required for any Rh-negative patient, suitable blood is almost always at hand and no time need be lost in emergency.

In the series investigated in this hospital no fewer than four high-titre anti-Rh, (D) sera have been found: the first in a soldier transfused in France prior to admission to a local hospital; the remainder in obstetric cases, mothers of the above-mentioned

erythroblastotic babies. Each mother willingly donated 500 ml. of blood, and from this the serum, suitably diluted and absorbed with the appropriate saliva, has enabled us to continue Rh groupings and to increase our stocks of anti-Rh serum far beyond our own requirements.

The main objection to this routine Rh testing has been said to be the small amount of high-titre serum available. I cannot help feeling that this is wrong. We have in our refrigerators enough Rh serum to group many scores of antenatal and blood donor panels, and any hospital or clinic wishing to start such tests will willingly be supplied with two active sera. Routine testing can be done with either serum and the negatives checked with the other. In this way the sera can be used economically and with greater confidence.

There can be no doubt that large-scale grouping will lead to the discovery of further samples of potent serum and existing stocks will be replenished from time to time. More importantly, the sensitization of Rh-negative mothers by Rh-positive blood transfusion will be avoided and the appropriate blood for the erythroblastotic baby and the Rh-negative obstetric haemorrhage case will always be available and ready for immediate use.—I am, etc.,

R. A. ZEITLIN,
Medical Superintendent.

St. Mary's Hospital, Portsmouth.

The Incision for Appendicectomy

SIR,—May I be permitted to express my concurrence with the views of Mr. R. H. Franklin (April 13 p. 585) on the subject of the incision for appendicectomy, with one important exception. This is in regard to his hard-and-fast distinction between McBurney's and Rutherford Morison's incisions. I have found advantage in making my skin incision for a gridiron nearer to the external superior iliac spine than is conventional, and also in a direction parallel to Poupart's ligament. This incision can be readily and rapidly extended upwards and laterally by splitting the external oblique and cutting through internal oblique and transversus abdominis muscles—i.e., converted into a Rutherford Morison. In my experience this expedient is seldom necessary. Hence a patient with acute appendicitis can be given the benefits of short convalescence and minimal peritoneal scar in the majority of cases.

Thus in a series of 100 cases of acute appendicitis operated on in 1944 and 1945 I used the paramedian incision on 31 occasions and the gridiron incision on 69. In only 5 of the 69 cases did I find it necessary to extend the incision as a Rutherford Morison. It is perhaps pertinent to add that in order to avoid expanding the incision, in 2 cases the appendix was removed by retrograde dissection.—I am, etc.,

Windsor. BRIAN WEBBER.

Operation for Varicose Veins

SIR,—In pursuance of the policy of pooling information about the operation of simultaneous ligature and injection of varicose veins I beg to report three items.

First, almost every patient under my care after this procedure has a temperature of 98 and 100° F. (36.7 and 37.8° C.) for two to four days afterwards. This in spite of a technique such as I would use for a cartilage, a hernia, or thyroid. I think it must be due to the extensive chemical phlebitis that follows. I regard it as a point in support of the policy of keeping patients under observation for three to four days after the operation, although they are got up for toilet purposes from the evening of the day of operation.

In the use of saturated common salt solution for injection I have had four patients who have had small areas of skin necrosis, two at the apex of Scarpa's triangle, one at the junction of the lower and middle thirds of the thigh. Another patient had an area of dead skin the size of a florin at the back of the calf after ligature and injection of the external saphenous vein. In three cases separation and healing followed uneventfully; in the fourth case the skin necrosis was noted at the end of the operation, so the skin was immediately excised and sutured with primary healing. The practical lesson from this is to spread the injection evenly throughout the length of the varicose vein traversed by the special olive-headed needle (Down Bros.), which I introduce into the vein. It is a rare complication, but it may be advisable to discontinue the use of this fluid. I am watching the results carefully. It has always followed the retrograde injection and never when the insertion has been from the ankle upwards.

Lastly, I have to report a death in my clinic. A spinal analgesic, which was carefully given, did not work. This was supplemented by a general anaesthetic; collapse occurred during the operation, and the patient, a young man in his twenties, died in the ward half an hour later. The post-mortem showed a well-developed thymus gland. I would make two observations on this: first, that a local or general anaesthetic is the most suitable for this procedure—I do not think a spinal analgesic advisable. Secondly, the operation is a major one and will probably always carry a small mortality. Therefore we must evaluate it correctly to the profession and to the public.

I have recently heard of the report in the daily press of the inquest on a patient who died during an operation for varicose veins, due to the injection of methylated spirit instead of saturated common salt. In future I am using this solution coloured sea blue with indigo carmine to avoid such an error, while concentrated glucose is being tinted with congo red.—I am, etc.,

London, W.1. HAROLD DODD.

Hospitals for the Aged and Infirm

SIR,—Dr. Mungo Park's letter (April 6, p. 549) is a welcome plea for hospitals for the aged and sick, a subject which is so often treated as a stepchild. During the wartime years the mental hospitals have admitted a very large number of patients with senile dementia, many of them of the simple dementing type who have no real need for special psychiatric treatment. The shortage of suitable accommodation elsewhere has resulted in their being transferred to the mental hospitals, which have provided the only portal of entry through their ever-open doors, even though the overcrowding is deplorable, often being as much as 25% over the already inadequate peacetime accommodation. Much more could be done for senile cases if a constructive policy was followed in which there was a proper means of sorting, initial observation, and specialized care in institutions meant for the purpose. Most of the cases could well be nursed in converted Army camps, such as Dr. Mungo Park has suggested. There is, however, the opportunity for the use of far larger units than those of fifty beds he mentions, as this would not give adequate classification, which is just as essential among the senile states as in other kinds of hospitals.

Making an analysis of 411 fairly recently admitted elderly cases which we are at present investigating, we were able to divide them into four diagnostic groups: (1) the simple dementing, (2) the confusional, (3) affective, and (4) paranoid. We found that the affective group, which was often accessible to conclusive treatment, offered the greatest recovery and discharge rate—namely, 49%—and the death rate recruited mainly from the senile confusional states, roughly 78% of this type dying within one year of admission. Further investigation into our case material revealed that of the 411 patients 135 have been discharged, 155 died in our hospital, and the rest remained with us as chronic material. Out of these latter cases approximately 28% need psychiatric environment; the rest do not.

These figures are suggestive of two needs: (1) that there is an increased need for special psychiatric hospitals for the aged where, with proper treatment, in a number of cases rehabilitation can be achieved; (2) that there is a need, as Dr. Park suggested, for infirmaries where the simple dementing type of seniles who are in no need of special psychiatric treatment could be looked after. The consideration of these two suggestions may offer better opportunities for the treatment of the elderly patients.—We are, etc.,

E. CUNNINGHAM DAX.
F. REITMAN.

Netherne Hospital, Coulsdon.

Spontaneous Hypoglycaemia

SIR,—The communication by Dr. N. G. Hulbert and Mr. R. J. McNeil Love describing a case of epilepsy complicated by hypoglycaemia in the *Journal* of April 20 (p. 603) invites comment and criticism. In this communication we are not given sufficient details with regard to the "attacks," including the one which was witnessed in hospital on Sept. 7, 1942, to be

certain that these "attacks" were in fact due to hypoglycaemic crises. The descriptions of the attacks given by the patient, himself a known epileptic, were not sufficiently clear-cut to establish a diagnosis of hypoglycaemic crises, and without definite additional evidence no other diagnosis except idiopathic epilepsy and habitual hypoglycaemia could have been made. We were told in this communication that the blood sugar on the occasion of the witnessed attack was slightly higher than the basic level found on previous estimations when the patient was free from attacks, whereas it is a known fact that hypoglycaemic crises usually arise due to a sudden fall of the blood sugar below the normal basic level for the patient concerned. Thus in diabetics a sudden fall of blood sugar from a previously high level to even 110 mg. % may precipitate a hypoglycaemic crisis, and occasionally normal people have been found with blood sugars fairly steady at the level of 40 to 50 mg. % without developing unpleasant symptoms. Other clinical evidence in this case was not presented. We are not told whether intravenous glucose actually cut short an attack or whether adrenaline was ever tried for the purpose. The improvement of the patient in his twenty-four hours of post-operative life must seem to most of us problematical, and it would be a strange thing if the blood sugar of any patient failed to rise after a subtotal pancreatectomy. It is noteworthy, as the authors themselves record, that the pancreas in this case was normal.

The publication of this case is useful in that it demonstrates that there are other causes of hypoglycaemia besides pancreatic adenomata, and we think that it has another value. There are fashions in medical diagnosis as well as in treatment. Spontaneous hypoglycaemia is a favourite at the moment; and it is our devout wish that, before it runs its course, there will not be too widespread an epidemic of pancreatectomy-cum-splenectomy among the general population.—We are, etc.,

NORA NAISH.
J. NAISH.

Bristol Royal Infirmary.

Tuberculin Therapy

SIR,—Many years ago I published in the *Journal* (Feb. 1, 1913, p. 214) experiments to show that human and bovine tuberculins produce similar effects in the human system to what they do in a culture medium—i.e., human tuberculin produces an increase in the organic acids excreted in the urine, and the bovine produces a reduction of the organic acids excreted in twenty-four hours in the urine. The patient with tuberculous adenitis upon whom the experiments were performed improved with injections of one kind and relapsed with injections of the other kind. It therefore seems to me that a great advance would be made if we could determine easily which kind of tuberculin is required in any individual case.

Whilst I am writing, may I suggest to Dr. H. C. Manning (April 20, p. 627) that "P.T.O." is *Perlsucht Tuberculin Oberstandt* and "P.T.R." is *Perlsucht Tuberculin Ruckstandt*—the one the supernatant fluid and the other the deposit after centrifugalizing a suspension of the bovine bacilli.—I am, etc.,

ARTHUR H. GREGSON.

Blackburn.

Stethoscope versus X Rays

SIR,—I should be grateful for space for a few words of explanation in reply to Dr. R. A. S. Cory (April 20, p. 628).

The purpose of my letter (Feb. 2, p. 182) was in no sense a condemnation of radiography as an aid to the diagnosis of pulmonary tuberculosis. It was really in the nature of a protest against the recent tendency to suggest its infallibility either positively or negatively. It is evident that Dr. Cory himself admits that absolute dependence upon radiography would be fallacious. My description of this particular case was prompted by the correspondence which had been carried on between the radiologist and the clinician as to the relative merits of their diagnostic methods. It was evident from this correspondence that radiology claimed a practical infallibility in its ability to give a positive or negative diagnosis. The point of interest in this case was that radiography failed to demonstrate a well-marked pulmonary tuberculosis. It seemed, therefore, worth calling attention to as evidence that too much reliance should not be placed upon *x*-ray findings, particularly if negative.

Dr. Cory's concluding sentence is not a fair summing up of my views in regard to the value of radiography in tuberculosis. I do not "ask too much" of it since I do not expect anything more of it than an item of evidence one way or the other which might assist in arriving at an accurate diagnosis. Dr. Cory states that he has "no hesitation in saying that the skiagram will reveal many more early lesions than the stethoscope will bring to light." The point of interest is that in this case it failed to do so. So, in all fairness, did the stethoscope, though it had at least aroused the gravest suspicions. It was the microscope that established the diagnosis.—I am, etc.,

J. FRANKLAND WEST.

Oxford.

*** This correspondence is now closed.—ED., *B.M.J.*

Deafness from Rubella in Pregnancy

SIR,—In relation to Miss Sylvian M. Martin's letter (April 13, p. 588), the following case may be of interest. A child aged 4 was submitted for psychiatric opinion, suspected of being mentally defective. She was born on Jan. 17, 1942, at full term, with cataracts on both eyes and a congenital heart lesion, and has been totally deaf from birth. Her mother suffered a sharp attack of German measles, for which she received medical attention six weeks before the child was conceived. There is no family history of deafness. There are no gross signs of mental deficiency in the child. Evidence is accumulating which indicates that there is a direct association between rubella during the early months of pregnancy and deafness and other congenital defects in the child. Is there any evidence to suggest that the virus of rubella may damage the unfertilized germ plasm?—I am, etc.

MURIEL BARTON HALL.

Liverpool, 1.

Obituary

Prof. GEORGE RITCHIE THOMSON, who died in the Edinburgh Royal Infirmary on March 14, aged 80, was consulting surgeon to the Johannesburg Hospital and formerly professor of surgery in the Witwatersrand University. He graduated M.B., C.M.Ed. in 1887 and then went to Glasgow, where for several years he was first house-surgeon and then assistant to Sir William Macewen. He left this country to serve as a civil surgeon in the South African War, and after its conclusion remained to practise surgery in Johannesburg. During the 1914–18 war he was officer in charge of No. 1 South African General Hospital in France with the rank of lieut.-colonel, S.A.M.C. He was attached to the South African Division and worked for some considerable time at Abbeville and was awarded the C.M.G. for his war service. He returned to South Africa in 1919 and was the first holder of the chair of surgery at the Witwatersrand University. He retired from active practice about fifteen years ago and made his home in this country in the New Forest. His elder son, Capt. K. Thomson, *M.C.*, is a doctor in the Colonial Service in Northern Rhodesia; his younger son, Commander R. Thomson, D.S.O., R.N., was killed in the war of 1939–45. Prof. Thomson joined the B.M.A. in 1907 and was elected a member of the Witwatersrand Branch Council in 1920.

On April 19 JOHN MORELL WILLIAMS was involved in a motor-cycle accident a few miles from his parents' home. He sustained a severe head injury, from which he died some twenty-four hours later. This Easter was to have been his last holiday before settling in practice at Banbury. He was 32 years of age. The younger son of Dr. and Mrs. Morgan W. Williams, of Morriston, Swansea, he entered St. Thomas's Hospital from Cheltenham College, and qualified M.R.C.S., L.R.C.P. in 1940. After a house appointment at Doncaster Royal Infirmary he joined the R.N.V.R. He saw much service in destroyers, including hazardous convoy work on the northern route to Russia, and numerous trips through "E Boat Alley" in the no less dangerous East Coast waters. He was only recently demobilized. A correspondent writes: John was a charming, kindly, and generous boy whom everyone liked and many loved. He seemed always to extract from life the greatest measure of fun and happiness; his good nature shone around him. All that he did he did well. In his work he had balance and sympathy, and his keen sense of humour enabled him to get full value from the passing scene.

Medical Notes in Parliament

HEALTH SERVICE BILL

SECOND READING DEBATE

Mr. ANEURIN BEVAN moved the Second Reading of the National Health Service Bill in the House of Commons on April 30. The Minister's speech was fully reported in the *Journal* of May 4 (p. 690).

Mr. RICHARD LAW said the Minister had the chance of presenting proposals which would have been welcomed by every party and by every section of opinion, lay or medical. He had preferred to bring to the House proposals which were feared and distrusted by the great majority of those who would be called upon to make them effective. It was a most extraordinary thing that the Minister, who had absolutely no administrative experience of a great Government Department, and who had no great knowledge, either practical or theoretical, of the very important subject-matter with which this Bill was dealing, should have set his own intuition and judgment against all those best informed in the medical profession and in the hospital services. The British Hospital Association and the British Medical Association were opposed to the Bill, so was the British Dental Association, and the three Royal Colleges had criticized it with varying emphasis. The President of the Royal College of Physicians was quite unable to bring the Royal College to endorse his view that the Minister, in taking the hospitals into his own control and ownership, was doing a good thing. Every body of informed and expert opinion outside the House was against the Minister on one part of the Bill or another. The Minister started by talking of sectional and vested interests. It was a monstrous perversion of the ordinary usage of words to describe great, responsible professional bodies such as had been mentioned as vested or sectional interests. He was willing to support any practicable means that would produce a comprehensive and efficient health service. But the Minister could have established a better co-ordinated and far more efficient health service if he had not been determined to sweep away the voluntary hospitals; to weaken the whole structure by removing from the field of local government one of the most important and vital responsibilities of local authorities; and to impose upon the medical profession a form of discipline which was totally unsuited to the practice of medicine, which depended above all else upon individual responsibility, individual devotion, and individual sympathy.

Ownership of Hospitals

The Minister had not given any solid justification for taking over the hospitals. The present hospital service was inadequate from the point of view of a comprehensive service, was badly distributed, and some of its buildings and equipment were completely out of date. But the main reason for this was that the finance had not been available. A hospital had a life and a purpose and an identity of its own; it was not just part of an administrative machine. The regional board should be not a controlling and directing board but a planning board. Then the voluntary hospitals could continue as individual institutions with their own identity.

The Minister had not explained how the regional boards were to be manned. According to the Bill, whatever powers the Minister gave to a board or a committee, he held in reserve authority to withdraw it and concentrate the whole service on himself. It was hardly surprising that most people felt nervous of the tendencies implicit in the Bill.

General Practitioner Service

On this subject Mr. Law said that there were two important principles. The first was that the doctor's only loyalty and only responsibility should be to his patients. The second principle was that, so far as his judgment was concerned, the doctor should be responsible to nobody else but himself, and certainly he should not be responsible to the State. Running through Part IV of the Bill there was a wholesale denial of both these principles. The doctor was to be paid, in part, by the State. He was to work in premises which were owned, staffed, and managed, if not technically by the State, by the State as represented by the local authority; and his field of work was to be defined for him by the State. Those three things added up to the beginnings of a whole-time State medical service. It was incomplete at the moment, but it was the first step, and the step that counted, towards a full-time medical service. "Will the doctor be a better doctor because he is paid a salary? I say he will be a worse doctor, because all his prospects of material advancement will depend, not on the service that he can render to his patients, but on the impression which he is able to make on his administrative superiors."

The Minister had said that the sale of practices was the sale and purchase of patients. That was humbug. When a doctor bought a practice he was not buying patients. When a doctor sold a practice he was not selling patients, he was not selling bodies; he was selling the goodwill he had earned with his patients. By forbidding the buying and selling of practices the Minister was removing one more material inducement which a doctor had to give the best service he could to his patients. The doctor, like the miner or the operative, was bound to be interested in his material conditions, in the welfare of his family, the future of his children. To deprive him, in his practice, of the inducement to improve his material position, to improve the prospects of his children, was to do harm, not to him but to his patients. It would reinforce the tendency already begun, with the payment of the decreasing capitation fee and so forth, to look for a future and remuneration, not to an increase in the value of his practice, not to the impression he made on his patient, but to his administrative superiors. This would have a very harmful effect upon the practice of medicine.

If, by a combination of threats and bribes, the Minister persuaded all the medical profession to work under him in making this Bill effective, the doctors of the future would not be as good as the doctors of to-day. The bad effects of this Bill might not be seen now or in six months' or a year's time, but they would make themselves evident in ten, fifteen, or twenty years' time. Finally, Mr. Law urged the Minister to consider very carefully the points that had been put to him by those who were interested in the hospital services and in the practitioner services.

Two Standards of Treatment

Dr. COMYNS, in a maiden speech, welcomed the Bill. His impression was that, for the most part, the adverse criticism of the medical profession was based on lack of information, or on wrong information. The leaders of the profession had failed to keep abreast of public opinion. The average doctor wanted to do first-class work himself, and not to be just a clerk filling out certificates, or acting as a sorting office for different diseases and illnesses, and having to dispatch his patients to one hospital or another for treatment. He required a decent income and a reasonable amount of leisure. He wanted to work with his colleagues, without the fear at the back of his mind that some part of his practice might be filched from him. Not only the doctor but the public at large would benefit enormously from the Bill. Many doctors were working under the most unsatisfactory conditions both in rural and in urban areas. If health centres were equipped and staffed as they should be, they would offer a tremendous incentive and encouragement to all who worked in them to give of their best.

Dr. Comyns deprecated the fact that it would still be possible for a particular doctor to give two standards of treatment, one within and the other outside the service. When everyone was entitled to free service, it was difficult to see why anyone should want to go to a doctor outside the public service unless he expected a better standard of service than that which the doctor usually gave to his public service patients.

Viscountess DAVIDSON said that doctors were deeply apprehensive, viewing the Bill not from any selfish motive but in the light of how it would affect their individual patients. Many younger men coming into the profession would welcome the Bill because it offered a certain degree of security. They did not know what freedom of action they might be losing, because they were inexperienced. The brilliant men would go abroad to find freedom from interference and scope for their abilities. The family doctor would be replaced by the clinic doctor, and there would be no freedom of choice. The personal and the individual touch would be lost. The Minister seemed

to be determined to prevent doctors from rising to great heights in their profession. He was levelling down standards, and not lifting them up. British medicine had always been in advance of medicine in other countries, but the result of this "most backward plan" would be that it would lose its position and its prestige in the eyes of the world. In her view the Bill was another link in the chain binding us all to the machine of State. It deprived the individual of yet more of his long-fought-for freedom.

Maternity Services

Dr. CLITHEROW said that the Bill would give the doctor the opportunity of realizing his ideals while he still had them. Salaries were wanted by many doctors, more especially the younger ones who, quite often, had no connexion with the British Medical Association. The possibility of everyday consultations between general practitioners depended upon the removal of the competition for patients. With salaries as the main basis of remuneration this could easily be achieved.

He asked the Minister if it was his intention to continue with the existing Central Panel Conference, or with any other similar body? Would the Minister consider making such a body a statutory one, and specify its constitution, so preventing it from being manipulated by its present parent body, the British Medical Association, and presenting the views of the dominant specialist opinion in that body?

The Bill ensured that hospital-booked cases would have antenatal treatment by the obstetrical team responsible for the confinement. Co-ordination of the full maternity service was in the best interests of mother and child. This kind of teamwork kept down maternal and infantile rates. The growing practice of having clinics associated with hospitals was likely to be disrupted if the emphasis was to be on health centre and domiciliary treatment for midwifery under the control of the local authority. The best service for the mother and child was at the hospital level with a co-ordination not possible under the dual system. For maternity purposes the whole service should be continued by a single body. Some means must be found to co-ordinate and not separate the maternity services.

Dr. Clitherow then went on to discuss Clause 32 of the Bill.

"In Clause 32, covering the various practitioners' committees, the Bill states that the Minister 'may recognize' these committees. Could we have an assurance that, where these committees are formed according to the requirements of the Bill, the Minister 'shall' recognize them, and thus do away with the feeling of ambiguity that these apparently permissive words cause in the mind of the layman? I am sure that the medical profession as a whole views with the greatest distaste the making of a special crime, with special and extremely heavy penalties, for the medical man who sells his practice. It is recognized that some steps must be taken to prevent such an offence, but I think that if it is left to the courts to decide whether there has in fact been any attempt to sell a practice, it will be better received by the profession than if it is left to a certificate of the Minister, even though the Bill provides that no prosecution will be undertaken without the consent of the Attorney-General."

Finally he asked for an assurance about Clause 47, which stated that any dispute under the Bill or regulations would be decided by the Minister or a person appointed by him. Was there any right of appeal to the courts, should any person find himself aggrieved by such a decision? Would the Minister give an assurance that the courts would always be available as a last appeal?

Commander MAITLAND brought forward a petition signed by over 10,000 people.

"We, the signatories of this petition, having learned that the Government have tabled a Bill which involves the transfer to the State of the buildings, equipment, and invested funds of the several cottage hospitals, urge you to oppose such a measure by every means in your power. We desire that our hospitals shall be allowed to play their part in any scheme for a national health service which does not entirely deprive the hospitals of their local management and local interests."

He suggested that hospital management committees should have individual representation of the various hospitals in their group.

Mr. SARGOOD, in a maiden speech, said that London had twelve medical schools, and he asked the Minister, before finally deciding on the form of a regional board applicable to London, to give it very careful consideration and take into consultation representatives of the London municipalities. He deplored the continuance of private mental institutions run for private profit. He asked the Minister to consider the setting up of some organization for the bulk purchasing of supplies for the hospital services. The Minister should also try to find a better way of dealing with the safeguarding of the liberty of the subject than by continuing the Board of Control.

Rheumatism

Mr. YORK said the Bill did not contain one word about rheumatism, a disease which had a more devastating effect on the industrial and home life of this country than any other. One-seventh of the industrial incapacity in this country was caused by rheumatism. In the spa towns and their doctors were concentrated all the best equipment, knowledge, and facilities for the treatment of rheumatism. The Minister of Health should press on with the work of the advisory committee which his predecessor set up to advise him on rheumatic diseases and their treatment, and should see that the local interest in the spa towns was not wasted and dissipated in his centralizing scheme.

Miss BACON said her experience among ordinary men and women showed that the Minister had overwhelming support for the Bill. The defects were matters of detail. The Bill gave to thousands of people freedom which they had never before enjoyed—to consult a doctor or specialist without thinking of the cost. Most local authorities agreed that it was impossible to organize efficiently a local authority hospital service, which would require joint boards. It was ridiculous for voluntary hospitals to say that since the cost of the hospital services would be defrayed by the Exchequer their extent and quality would be determined by consideration of cost instead of need. Voluntary hospitals in the past had not had money for the improvements they wanted. She hoped we should now see the end of the very long wards, and the provision of small wards with only four to six beds.

There was a limit to the number of patients a doctor might have on his list under the public service, but there was no limit to the number of his private patients. This was open to abuse. If a doctor took on more patients than he could cope with it would not be the fee-paying patients who would suffer. Not only must people get the best, they must also believe they were getting the best.

Students and Teachers

Sir JOHN GRAHAM KERR, speaking of the quality of the recruits to the medical faculties, said some were attracted by the high ideal of administering to the sick, but the ordinary young student was practical, and not swayed entirely by sentiment. The great attraction was the glamour of the prizes—what seemed to them comparative wealth, and dignity, and the possibility of high honour. They were not attracted by safety first, and salaries and promotion by age, but by the great possibilities of their future. If this Bill went through in its present form a large proportion of these brilliant young men would go in for some other line—industry, for example—or, if they were keen on medicine, go over-seas.

These young men had as their teachers the leaders in surgery, medicine, and obstetrics. That was where they got their inspiration. No doubt these teachers in many cases were moved by high ideals, but they knew the practical advantage that came to them from giving their unpaid services in the wards of voluntary hospitals. They knew that these students would tend to come back to their old teachers for consultations or operations. Lister, Pasteur, Jenner were such teachers. If a Government voted into power in a period of post-war unrest and disgruntlement were to force the Bill through Parliament as it stood at present, it would be guilty of treachery to great socialists, the real socialists, who had given of their means for the succour of the poor and needy, and whose memorials were to be seen in the voluntary hospitals of the country.

Mr. A. W. J. GREENWOOD thought the Bill bore evidence of compromise between the interests of the public, local authorities, voluntary hospitals, and the medical profession, but it concentrated not on the prevention but on the cure of disease. Periodic health overhauls at Peckham Health Centre showed that only 1 man in 10 was really fit, 6 people out

of 10 had some disorder of which they were not aware, and 3 people out of 10 were definitely sick. That was a burden we could not afford to carry. The proposed health centres were to be places where the public came only when illness was fairly far advanced. The health centre should be a place to which the public would go for intellectual and physical relaxation and for the active promotion of health.

The anxieties of the voluntary hospitals were completely groundless. The human atmosphere of the voluntary hospital depended entirely upon the personality of the medical and nursing profession and was not dependent upon ownership of the hospital. Men did not go into the profession to make money but, like scientists, teachers, and lawyers, in order to serve their country and their fellow men.

The Government was given a mandate to plan the economic and social affairs of this country. We were embarking upon a period when State control would be extended to a number of spheres of social activity which some would no doubt prefer should remain sacrosanct. The Bill provided an opportunity to give practical demonstration of the beliefs his party had held for so long.

Sir RALPH GLYN deprecated any remarks that indicated that doctors thought only of cash. Doctors had a call to serve their fellow men, and there were few who put their service to their fellows second to their financial position.

He regretted that industrial medicine and care had not been brought into the Bill, and the question of mental care was long overdue. Hospitals for the incurable should be extended, such as those of religious organizations, which should be allowed to contract out of this scheme or be in a position to continue to look after these people.

Nursing was dismissed almost in a paragraph in the Bill. The shortage of nurses was due to lack of recognition. It was important that we should go on recruiting the right type of man into the medical profession. The standard in the past had been high.

More Medical Opinions

Dr. MORGAN did not consider this was his ideal Health Bill, but he liked it. It was the finest Health Bill that could possibly be introduced as a compromise under present conditions. Having heard the discussions in the B.M.A., the T.U.C., and the Socialist Medical Association he realized that the Minister had done as fine a piece of compromise health work as was possible.

He saw nothing in this Bill which would disturb the great relationship between the profession and the public and the profession and the individual patient about which some of his colleagues talked a lot. Many of the things the profession had asked for were in it—national co-ordination and control of research—everything in the Bill would depend on the Minister's regulations, which should be elastic, fluid, and workable. There had not been opportunity for the staff of some institutions to join their own trade union. The regulations should provide on both the professional and the workers' side for joint consultation and negotiating committees at all levels. There were certain hospitals—e.g., the Quakers' Hospital at York—which had special claims and should be allowed to carry on the special form of treatment which they gave. The laboratory, blood transfusion, and research services should not be entirely in the hands of the Ministry, but should include the local hospitals and the research which was done by G.P.s. Ambulance services should be run, if possible, on regional rather than on local authority lines.

Although up to the present there had been no Governmental medical service which had been a success, we could, with democratic regulations, with consultative committees, a good Minister, good administration and department, build a fine health service which would be an example to the world.

The Human Element

Mr. MESSER said that there were two types of social services. The first were mechanistic and affected people in the mass, not so much as individuals. It did not matter very much who administered those services. The second type was the human social service which affected the individual. In that type of social service education and health were important. The atmosphere of the hospital was as important as the cleverness of the doctor. The patients themselves should be in close individual contact with those who administered. Hospitals, like schools, had individuality.

It was necessary in work of this description that the human aspect should be considered. The Minister said in effect: "I am the final arbitrator in deciding who shall man every stage of administration." The National Health Service Council would be the advisory and planning body. For the Minister to choose the people who were to advise him was right, but when we got to the lower level of the regional board, surely there was something to be said for its being a representative body. Mr. Messer asked, Why this loss of faith in the elective principle? Why should the regional body be a purely appointed body? How was the Minister to decide, from the names submitted to him, who were the best persons for the job? On the elective principle, the patient had some check on administration, whereas accountability, under the Bill, was only to the Minister and Parliament through the Minister.

The Doctor's Responsibility

Sir HENRY MORRIS-JONES said that to those who believed in nationalization this was a good Bill: nationalization of the health service at one short remove. No industry, and certainly no profession, could be improved by nationalization. The Minister had no consultation with any body interested in the measure. The House had never objected to consultations that established a fair measure of agreement.

This was not a National Health Bill at all, but might not inappropriately be called "national ill health" or "national disease service" Bill. The emphasis was on disease. This country had a very great record with regard to the prevention of illness. The death rate had been reduced from 22.7 per 1,000 in 1875 to 11.9 in 1944, the infant mortality rate from 150 per 1,000 50 years ago to 45 per 1,000 to-day, and deaths from typhus fever from 5,000 a year to 54. A large number of health services had not come under the Bill at all—the school medical service, services under the Ministry of Labour, the Home Office, the Ministry of Education, the Ministry of Pensions, and the Board of Trade. There were medical services in practically every Department of the State. Legislation could not create a good medical service. It had to be done by individuals. The Willink plan had the merit that it did satisfy the people who were to undertake the work. It was very unfortunate that the terms of service of general practitioners were not incorporated in the Bill. But what medical men were more afraid of was the loss of their freedom. The art and practice of medicine could only survive in an atmosphere of freedom. Initiative and enterprise in medicine had made a great contribution to the world. The doctor's responsibility was to his patient and not to the State. Some of the members seemed to think that the doctor had no right of his own at all. The doctor had three rights or duties: first, he must bow to the majority of this House; secondly, he had the right as an expert to give technical advice on all matters on which he was in a position to be consulted; thirdly, he had the same right as the miner, the docker, the agricultural labourer, and everyone else in the country to practise his livelihood and to protect the livelihood of his family. It was a very great mistake to think that all medical men had gone into the profession as a pure vocation like clergymen. Large numbers had gone into the profession for economic reasons. They had every right to be consulted at every stage of this Bill and not to have reflections passed on their patriotism. The Minister could have done as much for the health of this country by providing houses as by introducing this Bill. There were not the doctors to work the Bill, nor had we the hospitals.

Resuming the adjourned Debate on the Wednesday, Sir Henry Morris-Jones went on to regret that the Spens report was not available. He asked the Minister to drop the salary altogether from the terms of service, because the whole medical profession regarded the salary as placing them immediately in the position of State servants. The same basic salary would be paid to the inefficient and to the efficient, which was why the medical profession preferred the capitation system. The profession would also prefer to retain their goodwill and the right to sell their practices, rather than be given compensation. The distribution of doctors on the whole in this country was a fair one. There was direction under the Bill, both nega-

tive and positive. It was the first time that direction had been imposed under a statute of this country on any body of its people as a permanent measure. The negative direction was that no medical man or woman would be allowed, except by the consent of the committee—which would be the Minister—to remove from the place where he or she happened to be when the Act came into force.

He was afraid of the dull uniformity that ran through the whole scheme. It might very possibly become a utility scheme with a utility service under which doctors would sign and certify more and more, and be treating less and less and curing less and less. If the Minister would amend his Bill so as to do away with direction; to bring about a greater share in the administration of the Bill by the people who would have to work it; to encourage more interest in the voluntary and local hospitals, by allowing them a greater measure of control over their finances, with less central direction; and to create a general medical practitioner service, comprising a body of people who would work happily and with enthusiasm, then he might be able to make this Bill workable. If he was unable or unwilling to make concessions the Bill would be unworkable.

Professional Self-government

Mr. KEY, the Parliamentary Secretary to the Ministry of Health, said that the only argument advanced against the Bill seemed to be that it was right to conscript the labour and lives of men in a war against evil abroad, but it was wrong to conscript buildings and institutions in a war against disease at home. Every hospital or hospital unit was to have its own committee of management, and the members of that committee would not be black-hearted, black-hatted bureaucrats from Whitehall. They were to be appointed not by the Minister but by the regional board of the area concerned, after consultation with the local health authority, the local executive committee in charge of the practitioner service, the existing voluntary hospitals, and the senior professional staff in the hospitals themselves. The regional boards with their local management committees would enjoy a high degree of independence and autonomy within their own field. Each of the regional boards would have at its disposal an appropriate share of the present endowments of the voluntary hospitals, which were to be transferred into a central hospital endowments fund and redistributed according to the need of each region. The regional boards would be able to spend this money, or hand it over to local management committees to spend as they thought best, without any kind of detailed instruction or restrictive regulations from the centre. People appointed to the regional hospitals boards would not be there merely as representatives of local authority interests, but would be selected for their knowledge of hospital needs and hospital problems and be interested in hospital development, and not retarded all the time by considerations of a local character, particularly the incidence of local taxation. This hospital service was to be a national service available to all, and it was not going to be crippled by being made to conform to the present restricted areas of local administration, nor could its evolution wait on some, as yet undetermined, reorganization of local government.

Mr. Key went on to describe the composition of the medical practices committee.

"It is to consist of a chairman, who must be a medical practitioner, and eight members, six of whom must be medical practitioners. Of those six, five or a majority of the committee must be actually actively engaged in medical practice. That is called direction. What then, in the name of conscience, would be the definition of professional self-government? Where, may I ask, is there any other service paid out of local funds or out of national funds where anything approaching that amount of self-government exists?"

Obviously, some control of the distribution of doctors must be established. The B.M.A.'s view that "every registered medical practitioner should be entitled as a right to participate in the public service" was an impossible, impertinent claim. Neither town clerks, city engineers, school-teachers, postmen, dustmen, nor any class of public servants had such a right. The interests of the community demanded that the distribution of medical services should be organized with the claims and needs of patients and not the whims and fancies of practitioners as the guiding factor. The fundamental relationship between doctor and patient would remain what it was now. The *Lancet* had said that the doctor–patient relationship in modern form needed improvement rather than preservation; it could never be wholly satisfactory while the doctor was not only a friend in need but also a friend in need of his patient's money.

Salary and Capitation Fee

The establishment of the new service would destroy a considerable part, if not the whole, of the value of existing practices. "Difficulties of no mean dimensions will, therefore, be created for those whose participation, whose willing co-operative participation, is essential to the success of our service. We therefore think it wise, in the interests of that service, that they should be compensated for the loss they will suffer."

On the question of a salaried service Mr. Key said:

"The medical profession is not yet ripe for such a service, and some check of payment, in proportion to output, is still needed if we are to get from it the efficiency and the effectiveness which the community has a right to expect. That is not my statement. It is the statement of the Secretary of the British Medical Association, who said in a letter to the *Times* on April 17 that a salaried medical service '. . . might tend to replace competition for patients by competition to avoid them.' Second, and more important, a full salaried service is inconsistent with the free choice of doctor, to which we have agreed. A large salary cannot be paid irrespective of the work done, and the basis of fairness cannot be introduced into a wholly salaried service under existing conditions without compulsory allocation of the work—that is, distribution of patients among doctors. We regard the free choice by the patients as being the more important principle, and, therefore, we put forward a compromise. We propose the general practitioners' remuneration shall be partly basic salary and partly capitation fee. What the general range of remuneration shall be, what the proportion of salary to fee shall be, what the fee per head shall be are problems which remain to be determined. As has been said, we appointed the Spens Committee, consisting of half doctors and half others, to examine what the range of doctors' remuneration should be under the new conditions, and, just as we agreed the composition of that committee with the profession, so, when we have their full report, we feel we shall be able to settle with the profession the range of remuneration and the component parts of that remuneration."

The responsibilities of local authorities were being strengthened and not weakened by the Bill. It would be welcomed by the poorer housewives who, in many cases, had seen the health of members of their family sacrificed and their own health undermined by care and worry because of their inability, through poverty, to seek the early help and advice of doctor and of nurse. The Bill would prevent much of that illness and disease which was found among the poorer people to-day, and for them the day on which it became law would be a red-letter day indeed. The Bill was part of that great social programme which the people had so positively approved.

Proposed Amendment

Mr. WILLINK moved to leave out from the word "That" to the end of the Question, and to add instead thereof:

"This House, while wishing to establish a comprehensive health service, declines to give a Second Reading to a Bill which prejudices the patient's right to an independent family doctor; which retards the development of the hospital services by destroying local ownership, and gravely menaces all charitable foundations by diverting to purposes other than those intended by the donors the trust funds of the voluntary hospitals; and which weakens the responsibility of local authorities without planning the health services as a whole."

Mr. Willink said that he was in total disagreement with the declared view of the Labour Party that "it is necessary that the medical profession should be organized as a national full-time salaried pensionable service." In view of the observations made by the Parliamentary Secretary on the consequences of the application of that doctrine, in destruction of freedom of choice, was it still the policy of the Labour Party? The Parliamentary Secretary to the Ministry of Food said on April 26, 1945, that her idea of the general practitioner service was that it should be clinically supervised by the local authority. The Socialist Ministers in the Coalition Government had, in the words of the White Paper, declared their adherence to this principle: "The sense of personal association which is at the heart of family doctoring must be preserved." Why had the baleful influence of the Minister of Health overthrown the judgment of those far more experienced? There was not a hint in the Labour Party's programme that they proposed to confiscate hospital endowments and destroy the voluntary

hospitals. If that was their intention, it was most dishonestly concealed; as dishonestly as the hospital policy of the London County Council was put forward at a time when they knew they had agreed to give up their hospitals altogether.

He asked, was it not a fact that when the Minister sent for the representatives of the voluntary hospitals he immediately said to them: "I am not prepared to discuss the question of the extinction of the voluntary hospital system"? If so—and the statement was made by their representatives in a letter to him and not contradicted in his private secretary's answer—it seemed a monstrous way of treating bodies which had been promised that they should continue to survive in undiminished vigour. The same attitude was adopted with the representatives of the profession and of the local authorities. Integration was essential, but had been abandoned because the Minister wanted to nationalize hospitals and dared not nationalize the local authority clinics. The Minister was therefore regionalizing what was essentially personal, and it was a bad form of regionalizing. It established a non-elective body subject to the directions of the Minister whenever he chose to give them and covering an area so large that there would have to be two further sub-delegations from it—three bodies, each of which would be able to say: "This is not my responsibility." The public would find themselves forced to submit to the administration of junior civil servants, unable to take the necessary decisions themselves and unable to get meetings of these distinguished regional boards gathered from these huge areas.

It was ridiculous to suggest, as the Minister did, that the planning of this service would be prejudiced by leaving endowments where their donors meant them to be. It was not the regional board but the hospital management committee that should be the real unit in the hospital service; it should be called a "board of governors" and not a mere "managing committee," and should be endowed with legal personality, with its own staff, both medical and nursing, with its own income, and a right to attract gifts and legacies.

Municipal Hospitals

In connexion with municipal hospitals Prof. Henry Cohen had said:

> "The more progressive local authorities availed themselves of their opportunity and made such strides in the 10 years preceding the war, since when building has ceased, that there were, in many areas, public hospital services which equalled, if indeed they did not occasionally surpass, the voluntary hospitals of the area."

He also quoted Lord Moran as saying: "It is perfectly true that doctors are working perfectly happily under municipal administration under the Middlesex and Surrey County Councils, and I think that proves that there is nothing inherent in the municipal system which would make doctors discontented." There was nothing exceptional about the citizens of Middlesex or Surrey, and what was done there could be emulated elsewhere. It was only that many of the counties and county boroughs had had insufficient means. The major authorities were just as capable of running a hospital once they were told what sort of hospital it was necessary for them to run, as the regional hospital boards the Ministry was setting up.

"I turn to the proposals in Part IV of the Bill. Do these proposals give us any feeling that there will be an improvement, an enrichment, in the field of general practice? We on this side of the House are bound to remember at all times the view, not yet called back or revoked, of the Party opposite, that general practice should be a full-time salaried pensionable national service." The Parliamentary Secretary had admitted that a full-time salaried service was inconsistent with free choice of doctor, because it would be necessary in such a service to see that the same amount of work was done by doctors whether patients wanted to see them or not. With this Bill regulations could be made under which full-time salaried service could be introduced and free choice of doctor destroyed. The instrument had not been invented which could measure with any reasonable accuracy the extent of over-doctoring or under-doctoring. With the prospect of 100% service the doctors would in fact be most evenly distributed over the country. The risk of their not being evenly distributed was not sufficiently great to justify setting up this most unsatisfactory machinery with a large and most unsatisfactory addition to the criminal law and an expenditure of £66 million.

The Minister had introduced a Bill in which he could turn the general practitioners of this country into what his party still wished them to be—a full whole-time salaried pensionable service. There was no reason why the profession should become part-salaried at the moment except as a concession to Socialist doctrine.

Highway Robbery

Mr. CLEMENT DAVIES said that a great deal of nonsense had been talked about the freedom of choice of doctor and about direction. Doctors had never had as much freedom as they had now, and patients would have an even wider choice when the Bill was functioning fully and properly, and when there was a better distribution of the medical services.

Mr. UNGOED-THOMAS was concerned about the dual system whereby some would be fee-paying patients and others would come in under the general system. Freedom of choice of doctor was almost entirely an illusion—an illusion which had been fostered by the B.M.A. bureaucracy, which so largely misrepresented the interests and the views of doctors. Although it was an illusion, they could afford to pander to it, but not to the extent of bringing into this Bill the pernicious dual system.

Mr. SIDNEY MARSHALL congratulated the Minister on the very smooth manner in which he proposed what was obviously a very carefully prepared measure of highway robbery. If the Minister had considered the system which was adopted in the Education Act, in deciding the position of voluntary hospitals, he might have shown a little more mercy. He thought that the larger voluntary hospitals might have been allowed to carry on with State assistance by means of deficiency grants. He could not see that it was an advance in government to appoint selective regional boards directly under the control of the Minister, and not under the control of the elected representatives of the people.

Beginning of the End

Sir HAROLD WEBBE said that the Bill, the purpose of which was generally accepted, contained in its provisions many deplorable, reactionary, and destructive proposals. The transfer of the hospitals represented an encroachment of the first magnitude on local government, and was the most serious loss it had been called upon to sustain. Those were the words of the great Socialist London County Council, which promptly declared their complete, ready, and cheerful acceptance of the proposals. This was exactly what would happen in any dictatorship country. The local gauleiters had had their orders, and in fact the leader of the London County Council was in such a hurry to carry out his orders that he actually announced in the public press the decision of his party to support unanimously the Minister's proposals before it was conceivably possible that any one of its members could have had even the White Paper in his possession. That was a fine example of intelligent foresight.

The Bill tore the very heart out of the whole of the local authorities' health services, and it left them emasculated, truncated, deformed, and completely open to future attacks on the autonomy of local authorities. It marked the beginning of the end, even of the major authorities. The hospitals, the whole control of medical services within the local authorities, were to be transferred to regional boards, consisting of men nominated by the Minister—his creatures—serving on sufferance and subject at any moment to direction and regulation by him. If the Bill in its present form reached the Statute Book, at that very moment the Minister would have signed the death warrant of local government as we knew it and would have made a laughing-stock of our claim to be a democratic country.

Voluntary Inbreeding

Mr. SOMERVILLE HASTINGS said that anything that would limit the far-sighted planning of the regional hospital committees, or would limit the influence of the universities and teaching schools, one of which it was proposed should be, so far as possible, situated in each region, would be a disaster. If the hospital management committees had power to appoint doctors and senior staff they were very liable to follow the voluntary hospitals into that inbreeding which had been the curse of the system. There was no reason why local interest, local patriotism, and local pride in a hospital should not be

developed and continued under a municipal or national system as much as under the present voluntary system. About pay-beds, he said that a very strong case could be made for permitting those who wish to buy privacy to pay for a single bedded ward, provided, of course, that it was not needed for a case that required it for medical reasons. If the Minister or the Parliamentary Secretary should need hospital treatment, they would be quite justified in making use of one of these pay-wards because in them they could discuss matters with their officers without the B.M.A. learning of everything that was said. Patients who paid for their treatment would believe they were getting something better, and it would be in the interests of the surgeons and physicians concerned to keep up that delusion, if indeed it was one. This was most undesirable. There should not be two sorts of wards and two sorts of treatment in the same hospital. It might be a convenience to the doctors to have all their patients, private and public, under the same roof, but surely the patients in the hospital were even more important than the doctors.

Lieut.-Col. GAGE said that the proposal to remunerate practitioners by part-salary and a tapering capitation payment was bound to produce a general levelling in the standard of remuneration paid to the general practitioner, and it was not really suitable to any profession, and least of all to the medical profession. The capitation fee alone was a fair method of rewarding the practitioner. He would have preferred to see the global sum of £66,000,000, which was to be spent on compensation of elderly practitioners, used for providing security for the young man at a time when he needed it, which was before he qualified—not after he qualified. If some of that money could have been devoted to the provision of scholarships and other aids for getting the young man through his years of study, then indeed a great deal would have been achieved. He hoped that health centres would not have the effect of removing the queues from the surgeries to the health centres and making them longer queues, because more people would be attending. He hoped, too, that the doctors would be encouraged to go into the homes of the people and would not simply use the health centres as glorified surgeries where they expected everyone to go and wait in rows.

Mr. BOARDMAN thought that Mr. Bevan had paid too high a price by the concession that a doctor who participated in the service could also take fees. A miner would not be convinced that he had the same treatment as the mineowner who could pay for it.

Lord WILLOUGHBY DE ERESBY asked whether it was the intention of the Minister to nationalize war memorials, as Rutland's hospital was also the county war memorial. He (Lord Willoughby) had spent most of last year in a Ministry of Health or a State hospital, in a voluntary hospital, and also in a Canadian Red Cross hospital. Despite much kindness in all three, he had to admit that, given a free choice, the Ministry of Health hospital would be his last choice for further treatment. The system was wrong which did not enable doctors or staff to give just that extra bit of treatment, that extra bit of comfort which were so important when one was ill for months.

Evidence of the Hospital Surveys

Dr. HADEN GUEST hoped the Minister would adhere very closely to the Bill in its present form with its two main provisions of a complete hospital service and a personal medical service for all persons of all ages, insured or uninsured, without exception. If the national health service did nothing more than provide these two things it would be of the very greatest benefit to the health of this country. Poor people who were not in the scope of the panel service would now come into the service and get treatment. Uninsured women would no longer be afraid to consult the doctor because of the bill their husbands would have to pay. And mothers would more readily take their children to the doctor for so-called minor infectious diseases like measles and whooping-cough, the complications of which were considerable.

The necessity for a hospital scheme on a national basis arose from the facts as shown in a recent series of hospital surveys. The voluntary teaching hospitals would retain their independence and their leading position—in fact, an improved position to that in which they were at present, because they would be freer from any financial anxiety.

Mr. WILLINK: "The teaching hospitals will be subject to any direction the Minister may give, the limit to this direction being in no way defined in the Bill."

Dr. GUEST replied that he had not the least fear of any domination by the Minister of Health. Things done by agreement among equals were not the subject of unnecessary fears. The survey for the London area revealed a deficiency of beds for acute medical and surgical cases, for tuberculosis, and for maternity; and very poor provision indeed for the chronic sick. The distribution of hospitals over this area was haphazard. The problem was not one of buildings but primarily of expert medical and nursing staff. During the war, in spite of inadequate numbers of specialists and doctors, we managed, by co-ordinating the work of the voluntary and municipal hospitals, to create an Emergency Medical Service which did most valuable work. It saved thousands of lives and many hundreds of doctors. There was not the slightest reason why we should not do the same kind of thing in peacetime.

Mr. WILSON HARRIS believed that the anxiety which existed centred around two main questions—the future of the family doctor and the treatment of the voluntary hospitals. But if this measure was passed the lot of the ordinary general practitioner in many respects would be easier, and in only a few respects more difficult, than it was to-day. No health centre existed as yet, and it might be some time before any appeared. But when they did there would be nothing to require any doctor to go near one. He could still see patients in his own surgery. If, however, a doctor was wise enough to use the centre he would have his own hours for consultation, his surgery hours, just as to-day. Skill was not the only quality required in a medical man. In no profession was personality rated higher or did it play a greater part. Could not individual hospitals keep their endowments, particularly as the Minister was paying the basic necessary costs of management and operation? It would be the wise and statesmanlike course to leave the endowments to the individual hospitals, and merely take their buildings and fit them into the general scheme. He (Mr. Harris) could not see why local support should not continue. It was a pity that this great measure would not have, on its Second Reading, the support of a united House.

Freedom of Certification

When the debate was resumed on May 2 Colonel STODDART-SCOTT pointed out that the Bill did not provide a comprehensive health service. There was no attempt to co-ordinate the services of seventeen Government Departments. Nor was it a health Bill. It was purely a hospital or a medical service Bill. Only in Clause 16, in six brief lines, was there any positive health provision. They had a Bill which coerced the medical profession and coerced hospitals and local authorities. He thought the Bill contravened one of the promises of the Labour Party at the Election, that if they were returned to power they would set up a Ministry of Housing to deal with housing alone. Instead, there was the Minister giving five minutes only each day to considering the health of the people and spending the rest of his time stopping people building houses. There was anxiety among the people when they found that doctors were to be employed by the State and to be responsible to some statutory body set up by the State, which took its orders from the Minister. Under the National Insurance Bill a man with two children would receive £3 2s. 6d. for an unlimited number of weeks on the certificate from a doctor, and he did not think there should be anything in this Bill which would make his doctor less independent and fearless about certification.

There was nothing immoral in buying and selling medical practices. The present Prime Minister and the present Lord Privy Seal both put their signatures to the Coalition White Paper, which intended to carry on this "immorality." The buying of practices had never been that financial burden round the neck of a young man that it had been described. A medical man, from the day he qualified, could go into a decent-sized practice, and, by paying off the purchase price over a period of 12 years, secure for himself, during the whole of that time, no less than £700 per year. The drawback to men going into medicine was the medical education. £66,000,000 of the taxpayers' money was going to be thrown away so that this bit of party politics could be introduced. It would be better used if it were spent on providing cheaper medical education.

Tremendous Powers

Mr. Bevan had held the job of Minister of Health and Housing for nine months, and in medicine and obstetrics nine months was a very significant period. It was the period of gestation, and if he did not produce more houses quickly and a better medical service the people of this country would dub him not only sterile but impotent also. Tremendous powers were given to him under the Bill. It was possible, under Clause 43, for him to send to any part of the country an unqualified man to practise medicine, and it was possible for him to displace a doctor and send an unqualified man in his place. He had power on the Central Health Services Council and on the Executive Council to vary the constitution as he liked. In Clause 2 (3) no number was stated; a Minister could pack the members of these regional hospital boards to the extent that no one on the board had any knowledge of the running of the great hospital system. In Clause 35 the Minister had power to prosecute.

As regards health centres, there were no virtues in group practices and no advantages to be obtained by them alone, unless there were aids to diagnosis. To bring together an accumulation of doctors in a rural area would have only one result—patients would have further to go and longer to wait for medicine and documents. It would introduce into medical practice an institutional type of medicine; the personal contact and the personal touch of the doctor in his home would be lost. Was it necessary because the Government financed an institution up to 100% that it must physically own it, and not just control it? Regional Hospital Boards for the overall planning of the hospital system were excellent. They should also plan the situation of the health centres. This Bill could, without any extra legislation, create a State monopoly in specialists, doctors, hospitals, and dentists. It was an insincere Bill; the service it proposed was not a free health service, because every individual would have to pay £3 a year for it.

Mr. HARDY asked the Minister to take the same view of the importance of the ambulance service as he was taking of the medical and hospital services, and bring them under the regional authority. Inadequate ambulance services in many parts of the country had been responsible for loss of life.

Sir WAVELL WAKEFIELD thought it was tragic that a measure, in the preparation of which the doctors had given their help in the past two decades, should be opposed by an almost united medical profession. The reason for this was that doctors felt deeply that the public would be worse served instead of better. There was going to be a much more impersonal and less personal service. The Bill would alter fundamentally the relationship between doctor and patient, and do away with the voluntary principle in our great hospitals, with the exception of the teaching hospitals, which had been so vital a characteristic of the life of our nation.

The Consultants' Views

Sir ERNEST GRAHAM-LITTLE said he opposed the proposals of the Coalition White Paper on the health service two years ago for the same reason that he opposed the present Bill, because the profession was overwhelmingly resistant to it, especially the consultants. The Bill differed from the Coalition White Paper in its nationalization of hospitals. The Government claimed to have a mandate from the country for a bewildering number of projects, but the nationalization of hospitals was nowhere mentioned in the programme of any Socialist candidate. Socialist candidates had made most extravagant promises to supply the fullest measure of specialist and institutional treatment; he had even heard of an optimistic charwoman who expressed her confident expectation that she would now be able to call in Lord Horder whenever she wished. The voluntary hospital was the life of the consultant. It attracted those men and women who were deeply interested in the scientific practice of medicine and in research. It offered this attraction because it offered complete freedom. That freedom would vanish with this Bill. Perhaps the most serious result of the proposals for the hospitals would be the mortal injury to medical research; for the last 100 years medical research had come almost exclusively from the voluntary hospitals. The Bill contained a ludicrously meagre reference to research—nine lines, in Clause 16, dealt with medical research, but 140 lines, in Clause 35, were devoted to devising a number of savage punishments for the doctor who wished to introduce to his patients a successor to his practice.

Mr. STOKES, speaking on behalf of the Roman Catholic community, asked for an assurance that the principles for which the Catholic hospitals stood should be safeguarded when they were taken over.

Mr. GERALD WILLIAMS said doctors and patients in this country up till now had been brought up on initiative. Patients would become disgruntled, and doctors would be discouraged as the result of the Bill if they were to be forced to use nothing but Government prescriptions. Some bad doctors might be pleased at the thought of having a guaranteed salary whether they gave good service or bad, but he still believed that there were many good doctors in this country, for he had not met one so far who was in favour of the Bill.

The Doctor's Loyalty

Mr. J. S. C. REID said that the general practitioner's loyalty should be solely to his patients and not in any respect to any service or to the State. If his patients believed in him he should need to fear no man, but if his patients did not believe in him he should not be able to fall back on official support to sustain him. That was the principle which ought to run through this matter, but it was a principle which was gravely imperilled by the provisions of the Bill. The provisions of this Bill in regard to general practitioners went very much further than was necessary, and they endangered most seriously the doctor's freedom and therefore they endangered the patient's interest. The proportion of areas in which a salary would be necessary to attract a sufficient number of doctors was comparatively small. To make a basic salary general was wholly unnecessary and, on general principles, very objectionable. Indeed, there seemed to be no reason for making it general, except that it paved the way for an ultimate adoption of a salaried service. The Minister was out for a full-time salaried service as soon as he felt he could impose that upon the country.

Hospitals should have not an executive but a planning organization at the regional level. Remote control must be avoided. It was not so much a question of ownership—although there was no reason for the change of ownership—it was the control by the local board of governors which was the essential thing.

In conclusion Mr. Reid asked: Why was so much being left to regulations? Why was the House being asked to give the Government a blank cheque in matters of such enormous importance? Was the scheme ready or was it not? If the scheme was ready, why should the Government be afraid to put it in the Bill? If it was not ready how could the Government be sure that the Bill was going to work?

The Minister in Partnership

Mr. ARTHUR GREENWOOD (Lord Privy Seal) said that as soon as the Bill was on the Statute Book the Minister of Health, in collaboration with the medical profession and with the hospital authorities, would establish a partnership to work out in detail how this great measure was to operate in the years to come. In the public hospitals of this country to-day there were full-time salaried men who never earned a guinea in fees. Was anybody going to suggest that they were bad doctors because there was not the motive of personal gain? The younger doctors were public-spirited men who were prepared to serve the public without the incentive of being able to buy or sell practices or go running round with a good bedside manner to collect more and more patients.

The life of the voluntary hospital system of this country was drawing to its close. Wide powers of regulation must be given to the Minister because it was impossible, in a Bill of this kind, to cover every conceivable contingency which might arise in respect to every hospital in the country.

Doctors had to be fairly well distributed round the country. If there was to be a little direction, and if it was a public-spirited service, which he believed it to be, then that direction would be gladly accepted by the doctors. In the South Division of Bristol, which had one of the busiest single housing estates in the country and had a population of 34,000, there was not one resident medical man. In the town of Taunton, which was not far away and had a population of approxi-

mately 40,000, there were 56 registered medical practitioners. This was what freedom had meant. This meant that in a growing housing estate there was no doctor. Until now there was no authority to order a doctor to go there.

"Some references have been made to the conditions of service, remuneration, and so on. The Bill gives the Minister a general power to prescribe by regulations the conditions of service, remuneration, and qualifications of officers and servants employed by the new regional hospital boards or other bodies providing health services under the Bill. It is my right hon. Friend's intention before prescribing any terms of service or rates of remuneration to use the familiar machinery of discussion and negotiation with employees. Where suitable machinery exists and is in operation it will be used with such adaptations as may be necessary in the new circumstances. What my right hon. Friend has in mind where there is no machinery is to set up some machinery of the Whitley Council type behind which there may be provision for agreed reference to arbitration."

In conclusion, Mr. Greenwood said: "We are concerned not about the medical profession, or the dentists, or the opticians; we are concerned about the health of the people of this country."

Question put: "That the words proposed to be left out stand part of the Question."

The House divided: Ayes, 359; Noes, 172.

Mr. CHURCHILL moved: "That the Bill be committed to a Committee of the Whole House."

Question put.

The House divided: Ayes, 180; Noes, 344.

The Bill was committed to a Standing Committee.

Committee Stage of Health Bill

The Committee stage of the National Health Service Bill will start in a Standing Committee of the House of Commons on Tuesday, May 14.

Sir WAVELL WAKEFIELD asked on May 2 whether the Bill would be taken in Committee on the floor of the House or taken upstairs. He asked whether, in view of its importance, it could be taken in the House. Mr. HERBERT MORRISON said the Government thought that a limited Committee would examine the Bill very thoroughly. The Government proposed to take it upstairs for the Committee stage.

Mr. CHURCHILL asked whether Mr. Morrison realized how much this decision was regretted.

Medico-Legal

MEDICAL EVIDENCE IN PENSION CLAIMS

Until 1943 a person claiming a war pension had to bring good and strict evidence that his disability was in fact attributable to war service. At the end of that year, however, in order to give claimants every possible consideration and to remove discontent, the Royal Warrant, 1943, stated that thenceforward no claimant should have the burden of proving that the prescribed conditions had been fulfilled, and that the benefit of any reasonable doubt should be given to the claimant. Now, therefore, when a person makes a claim, he is not obliged to bring any evidence, though he may do so if he wishes. The Service Department concerned must submit to the Minister of Pensions all the available evidence both for and against the claim, including the claimant's medical history. The Minister may submit any medical question to a medical officer, and then, with all the evidence before him, he has to decide whether or not the disability is attributable to war service, or the other relevant conditions (concerning aggravation, etc.) are fulfilled. If the evidence leaves him in reasonable doubt, the claimant must have the benefit; he must not decide against the claimant on a mere balance of probabilities. Moreover, if an injury or disease which has led to the discharge or death of a member of a Service was not noted in a medical report made on the member when he began his war service, he is entitled to a pension unless the evidence shows that the prescribed conditions (of attributability or aggravation) are not fulfilled. The presumption laid down by this article 4 (3) of the Warrant takes the place of evidence in favour of the claimant. His claim will fail only if the evidence shows by a real preponderance of probability that the disease could not be attributable to war service or was not aggravated by it. Whereas before December, 1943, the claimant could have a pension only if a medical officer or board appointed by the Minister certified that his disability was attributable to military service, now the Minister certifies. If he rejects the claim on the ground that it is not attributable to war service, the claimant may appeal to a pensions appeal tribunal. If a claim involves medical questions, the Minister must submit those questions to a medical officer or board and determine in accordance with their certificate. The medical officers now decide only medical questions and are not concerned with entitlement. An appeal to a tribunal is a judicial inquiry, and the Minister must put before it all the relevant facts, and, when a medical question is involved, the certificate of the medical officers. The tribunal, unlike the Minister, need not accept this certificate.

This procedure, which was summarized by Mr. Justice Denning in dealing with a number of recent appeals from decisions of tribunals,[1] appears not always to have been followed, and the learned judge corrected in detail some of the errors that have been made. In one case the Minister, instead of submitting the certificate of the medical officers to the tribunal, apparently adopted their views as his own and embodied them among the reasons for his decision. By doing so he deprived them of the standing of evidence. Speaking generally, said his lordship, opinions on medical questions have no value unless they are the opinions of medical experts, and in order to have probative force they should be authenticated by a medical man. An exception is where the appellant admits, either expressly or by implication, that the opinions are correct; his admission is then itself evidence. Tribunals have rightly rejected the Minister's reasons as evidence, and have then found themselves without any evidence to support his decision. Sometimes the medical member of the tribunal has expressed an opinion on the medical question in favour of the Minister's decision, but that opinion is not evidence. He is a judge, not a witness, and any opinion of his own expressed privately to his colleagues is ruled out as evidence by the statutory rules, which lay down that both sides shall be informed of the evidence and have an opportunity to consider it and cross-examine on it. Only when a claimant consents to be medically examined by the medical member, or when he admits the correctness of the medical member's view, is the opinion of that member evidence.

In the case of Capt. Starr, who claimed on account of aggravation of glaucoma and hyperpiesia, two naval doctors reported that the condition had been aggravated by service. The Minister rejected the claim, giving as his reason that the disability was primary glaucoma contracted before the service and unconnected with it. He did not disclose the source of this view. Capt. Starr's own doctor corroborated his claim. Glaucoma was not noted in any medical report made on the officer at the commencement of his service. Capt. Starr's doctor also testified that his blood pressure had been raised as the result of naval service, but in relation to this disease he was not supported by the presumption based on absence of a report. The Minister, again without support for his reasons, decided that the hyperpiesia was not related to the service. Capt. Starr appealed to the tribunal, which rejected his appeal because it could not find any "set medical grounds" supporting the contention that either of his complaints had been affected by service. The ground for objection, it pointed out, was a medical one: that strain did not worsen the condition but either produced a catastrophe or did not. Mr. Justice Denning found this decision wrong in two respects. First, it put upon Capt. Starr an unjustified onus: the question was not whether there were any set medical grounds supporting his contention, but whether there were any negativing it. Secondly, there was no evidence to support the tribunal's decision. Its view concerning the effect of strain was not supported by the opinion of any medical man; it was founded only on the Minister's decision or the medical member's advice, neither of which was evidence. He therefore allowed Capt. Starr's claim.

Similarly, an ex-soldier named Nuttall claimed that his disseminated sclerosis was attributable to war service. The Minister admitted that it had been aggravated by war service but said it was not attributable to war service. His reason was that the clinical findings, the course, and the known pathology of the condition afforded no indication that any specific factor in the service was responsible. That reason, said the judge, put the burden in the wrong way. The question was whether there was evidence that no factor in the service was responsible. Similarly, the tribunal, dismissing the appeal, put the burden the wrong way in saying that there was no medical

[1] Starr, R., *v.* Minister of Pensions, 1946, 1 All E.R. 400.

evidence to support the claim; it ought to have asked whether there was any evidence to negative it, and the learned judge found none.

On the other hand, in considering a claim by the widow of a Capt. Bourne, the Minister had sent his reasons to the medical services division of the Ministry to ask whether it agreed, and the division sent the paper back with an endorsement "Medically agreed" signed by one of its doctors. This constituted authentication by a medical man, and therefore made the Minister's reasons evidence. The tribunal, considering it with the claimant's evidence and being advised by its medical member, decided against the claimant. The learned judge found that the tribunal had sufficient evidence for its conclusion.

ACCIDENT IN A DOCTOR'S HOUSE

A Glasgow radiologist, having advised a patient, asked him to let himself out. Some time later the patient was found lying on the basement stairs with a broken spine; he died two weeks later, and his widow and eight children were awarded £1,641 damages by the Court of Session in Edinburgh. Their Lordships found that the passage through which the patient had had to go was dark or badly lit, and that the nearness of the unlighted basement stairs constituted a danger to a person not acquainted with the house; they therefore held that the doctor had been negligent. The law of England and Scotland alike makes the owner of premises liable to take all reasonable steps to protect a person who comes on to the premises by invitation, and a patient visiting a doctor would fall into this category. The Court's judgment was, however, upset on appeal[1]. Lord Cooper, the Lord Justice-Clerk, found on the evidence that the stair light had been lit and the door open. It could not have been foreseen that any normal person seeking to go out would turn away from the lighted portion of the premises in order to explore, unaided, the unlit portions of a strange house. The doctor had no duty to foresee the unaccountable conduct of the deceased, who was himself the author of his fatal misfortune.

The Services

Surg. Vice-Adml. H. St. C. Colson, C.B.E., has been appointed an Honorary Physician to the King in succession to Surg. Vice-Adml. Sir Sheldon Dudley, K.C.B., F.R.S., who has been placed on the retired list; and Surg. Rear-Admls. F. J. D. Twigg and H. R. B. Hull have been appointed Honorary Surgeons to the King in succession to Surg. Rear-Admls. C. V. Griffiths, D.S.O., and W. H. Edgar, C.B., O.B.E., respectively, who have been placed on the retired list.

The King of Norway has conferred the Norwegian War Medal upon Temp. Surg. Lieut. H. H. Kennedy, R.N.V.R. for assistance given to personnel of Norwegian corvettes in difficult circumstances.

The King of the Hellenes has conferred the Greek Distinguished Service Medal upon Temp. Surg. Lieut.-Cmdr. V. O. B. Gartside, R.N.V.R., for services as medical officer in the Greek destroyer *Adrias*.

Major (Acting) P. A. M. Van De Linde and Capt. R. H. S. Lee, M.B.E., R.A.M.C., and Capt. S. P. Jain and Lieut. Nataranjan, I.M.S., have been mentioned in dispatches in recognition of gallant and distinguished services in the field.

The following appointments and mentions in dispatches have been announced in recognition of gallant and distinguished services while prisoners of war:

O.B.E. (Military Division).—Lieut.-Cols. (Temp.) P. C. Dutta and W. J. L. Neal, I.M.S.

M.B.E. (Military Division).—Capt. J. A. Sutherland, R.A.M.C. Majors H. S. Manni, and B. L. Kapur; Major (Acting) L. W. Ashton-Rose; Capts. T. C. Bose, P. V. Ramaniah, and B. D. P. Rao, I.M.S. Subadar C. Dev and Jemadar S. Singh, and Conductors G. E. McDonald and P. Wolfe, I.A.M.C.

Mentioned in Dispatches.—Lieut.-Col. G. D. Malhoutra, O.B.E., Lieut.-Col. (Temp.) B. Chaudhuri, O.B.E., Lieut.-Col. (Acting) K. F. Alford, Majors L. Feinhols and J. O'Neill, Majors (Temp.) A. C. Glendinning, G. A. Graham, M. N. Sardana, and S. A. Hasan, Capts. B. I. Evans, A. M. Best, N. K. Mehra, N. S. Pillay, A. Thachan, B. N. Sudan, and A. K. Thomas, I.M.S. Subadar A. A. Bakhari, Jemadar (now Subadar) A. K. Chanda, Jemadars D. N. Malik, and K. Singh, Cdr. G. McG. Hartley, Sub-Cdrs. R. R. Braganza, M. V. Game, C. H. James, D. A. Plomer, J. J. G. Towers, and T. A. J. Wickham, I.A.M.C.

CASUALTIES IN THE MEDICAL SERVICES

Died.—Surg. Lieut. John Morell Williams, R.N.V.R.

[1] *Scotsman*, Feb. 23, 1946.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

The E. G. Fearnsides Scholarship for clinical research on organic diseases of the nervous system is open to members of the University or of Girton College or Newnham College who are graduates or titular graduates in Medicine, or to graduates or titular graduates in Arts who have passed Part II of the Natural Sciences Tripos. Applications must be sent to the Registrary before June 24.

UNIVERSITY OF EDINBURGH

Prof. J. R. Learmonth, C.B.E., has been appointed regius professor of clinical surgery. This chair was formerly held by Sir John Fraser and has been vacant since he became Principal of Edinburgh University. Prof. Learmonth will hold the post together with his present chair of systematic surgery. It is the first occasion on which two posts have been combined in this way at Edinburgh. Prof. Learmonth graduated with honours at Glasgow University in 1921, gaining the Brunton Memorial Prize for the most distinguished graduate of medicine for the year. Following the award in 1924 of a Rockefeller Medical Fellowship he spent a year at the Mayo Clinic in the United States, and in 1928 returned to join the surgical staff of the clinic as a neurological surgeon. From 1922 to 1928 he worked as assistant to Prof. Archibald Young, first in the Anderson College of Medicine, Glasgow, and later in Glasgow University. In 1932 he succeeded Sir John Marnoch as regius professor of surgery in the University of Aberdeen, and in 1939 was appointed to the chair in Edinburgh.

SOCIETY OF APOTHECARIES OF LONDON

At a meeting of the Court of Assistants, with the Master, Dr. Hugh F. Powell, in the chair, Drs. N. S. Finzi and Macdonald Critchley were elected to the Court and took their seats. Dr. J. P. Hedley was reappointed as the Society's representative on the Central Midwives Board.

On March 12, Lord Moran, President of the Royal College of Physicians of London, delivered a lecture entitled "Into Battle" to an audience of about 150 guests. The lecture was followed by the first post-war entertainment to the Members of the Society.

A special meeting of the Court was held, under the chairmanship of the Master, in connexion with the National Health Service Bill.

The Diploma in Industrial Health, *honoris causa*, was granted to: Dr. A. J. Amor, Dr. John C. Bridge, Prof. F. A. E. Crew, F.R.S., Dr. Margaret Dobbie-Bateman, Dr. M. W. Goldblatt, and Dr. E. R. A. Merewether.

The Diploma of the Society was granted upon examination to the following candidates: E. T. De Mel, J. S. E. Gilbart, J. J. Maskell, M. Lakner, P. F. Osborne, A. M. Benson, R. Hodgkinson, K. R. Brookes, R. A. Armstrong, E. H. Osborn-Smith.

CONJOINT BOARD IN SCOTLAND

The following candidates, having passed the final examinations, have been granted the diploma of L.R.C.P.Ed., L.R.C.S.Ed., L.R.F.P.&S. Glas.:

Y. Anwar, H. Biggins, M. Bleicher, W. A. Brown, I. S. Bruce, A. M. Buchanan, J. Caldwell, W. Campbell, R. E. Dwork, F. Fleming, N. Katz, S. O. Krause, L. W. Kyrollos, A. McDonald, Catherine McGuigan, R. D. G. MacLennan, I. H. Mathieson, N. Meleca, Edith M. Muggoch, L. R. Orens, G. L. Park, F. R. Roberts, Caroline Y. B. Robertson, D. N. Rosenberg, J. Rusius, Agnes E. Russell, J. Singh, J. W. Tandatnick, T. G. Thomas.

Medical News

The annual general meeting of the British Association of Physical Medicine will be held at the Royal College of Surgeons, Lincoln's Inn Fields, W.C.2, on May 15, 1946, at 5.30 p.m., and will be followed by a dinner in the College.

A meeting of the Tuberculosis Association will be held at 26, Portland Place, W., on Friday, May 17, at 5 p.m., when a paper on "Primary Pleurisy with Effusion—Clinical and Epidemiological Features and After-history of 190 Cases" will be read by Dr. Brian Thompson. At 8 p.m. a discussion on "The Morbidity of Tuberculosis" will be opened by Dr. W. T. Russell and Dr. Norman England.

Dr. Philip Inwald, Dr. Horace Joules, and Dr. Stephen Taylor, M.P., will be the speakers at a meeting arranged by the Socialist Medical Association to be held at Denison House, 296, Vauxhall Bridge Road, S.W., to-day (Saturday, May 11) at 3 p.m. Mr. Somerville Hastings will preside, and the subject will be "The New National Health Service—The Profession and the Public."

In connexion with the bicentenary celebrations of the Middlesex Hospital there will be three lectures at 4.30 p.m., on May 20, 22, and 23: Sir Robert Robinson, P.R.S., on "Chemistry and Medicine"; Sir Edward Mellanby, F.R.S., on "The Future of the Medical Sciences"; and Sir Lionel Whitby on "The Middlesex and Medicine."

The first post-war reunion of the Edinburgh University Club of London will take place at the May Fair Hotel, Berkeley Street, W., on Wednesday, May 29, at 6.30 p.m., when members may meet the President-elect, the Right Hon. Sir John Anderson, and Lady Anderson. Any member not having received his invitation by May 18 should communicate with the hon. secretary, Dr. Bruce Williamson, 12, Wimpole Street, London, W.1.

An exhibition of British chemical research, organized by Imperial Chemical Industries, will open in London in June. Its purpose is to demonstrate how, under the stimulus of war, British chemists made discoveries of permanent importance to mankind. The exhibition will be held at the Tea Centre, Lower Regent Street (corner of Jermyn Street), London, S.W.1.

The Illuminating Engineering Society has arranged a lighting exhibition on Wednesday and Thursday, May 15 and 16, as part of its session at which papers will be read on wartime applications of light and future development after the war. The programme includes an address on Wednesday at 11.15 a.m. by Prof. H. Hartridge on light and vision. The exhibition is at the Lighting Service Bureau which adjoins the Institution of Electrical Engineers, 2, Savoy Hill, Victoria Embankment, W.C., where the sessions will be held. The office of the Illuminating Engineering Society is at 32, Victoria Street, S.W.1.

The National Association for the Prevention of Tuberculosis announces refresher courses as follows: Course for medical practitioners and tuberculosis officers at Papworth Village Settlement, June 18–20; fee two guineas for lectures and demonstrations, and two guineas for three nights' accommodation at Girton College. A course on treatment of tuberculosis will be held at the London School of Hygiene and Tropical Medicine, Keppel Street, Sept. 23–28; fee four guineas. A Newcastle-upon-Tyne course will be held from Nov. 4 to 8; fee four guineas. Early application should be made to Dr. Harley Williams, Tavistock House North, Tavistock Square, London, W.C.1.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* there was a sharp drop in the incidence of whooping-cough 327, scarlet fever 315, acute pneumonia 219, measles 160, dysentery 81, and diphtheria 48.

The returns for scarlet fever and diphtheria were the lowest for 32 weeks. The fall in scarlet fever was general throughout the country, but the decline in diphtheria was confined to three counties: Durham 17, Northumberland 15, London 14. Whooping-cough was generally less prevalent, except in London and the adjacent counties, where there was no appreciable change. Cases of measles decreased slightly in most areas; Lancashire was the only exception, with an increase of 20.

The notifications of dysentery were the lowest for the past 22 weeks. The chief returns were Lancashire 28, London 22, Surrey 16, Middlesex 15, Warwickshire 13.

In *Scotland* decreases were recorded in the notifications of measles 351, acute primary pneumonia 90, diphtheria 38, and whooping-cough 29. In contrast there was a rise in dysentery from 32 to 60, due to a small general increase; the only fresh outbreak was in Renfrew County and involved 10 persons.

In *Eire* there was a decline in the incidence of diarrhoea and enteritis 24, diphtheria 15, and scarlet fever 13.

In *Northern Ireland* the only change of note was an increase of 13 in the cases of scarlet fever.

Quarterly Returns for Northern Ireland

During the December quarter of 1945 a birth rate of 21.1 per 1,000 was recorded; this was 0.4 more than the average of the five preceding fourth quarters. Infant mortality was only 55 per 1,000 registered births, as against 74 for the five-years average. Maternal mortality was 2.1 per 1,000 births and was 0.9 below the average. The general death rate was 11.2, being 1.6 below the average rate for the five preceding fourth quarters. Deaths from infectious diseases included 66 from diarrhoea and enteritis under 2 years, 13 from whooping-cough, and 5 from diphtheria. Deaths from pulmonary tuberculosis were 166 and from other forms of tuberculosis 51, which totals were 38 and 14, respectively, below the five-years average.

Week Ending April 27

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,054, whooping-cough 1,669, diphtheria 389, measles 2,793, acute pneumonia 654, cerebrospinal fever 48, dysentery 163, paratyphoid 5, typhoid 4.

No. 16

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended April 20.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each Infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946 (a)	(b)	(c)	(d)	(e)	1945 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	64	11	29	2	1	73	2	23	4	4
Deaths		—	2				1	—		
Diphtheria	415	27	80	39	10	565	19	108	113	14
Deaths	5	1	2	—	—	7	1	2	—	—
Dysentery	189	22	60	—	—	523	77	197	4	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	1	—	1	—	—	3	—	—	—	—
Deaths		—					—			
Erysipelas			38	6	1			23	7	3
Deaths		2					—			
Infective enteritis or diarrhoea under 2 years				22					22	
Deaths	45	6	5	7	3	47	5	9	8	1
Measles*	2,392	935	459	39	1	15,901	1314	437	52	34
Deaths	1	1	4	—	—	13	2	3	—	—
Ophthalmia neonatorum	60	7	10	—	—	68	6	15	—	—
Deaths										
Paratyphoid fever	9	—	—	1 (B)	—	3	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	652	50	4	6	4	573	23	5	2	3
Deaths (from influenza)†	28	4	—	3	1	11	1	—	1	—
Pneumonia, primary			137	11				191	33	
Deaths		25		10	13		29		12	9
Polio-encephalitis, acute	—	—				1	—			
Deaths		—					—			
Poliomyelitis, acute	5	1	3	1	1	8	1	1	—	1
Deaths		—					—			
Puerperal fever		3	5		—		4	19		—
Deaths										
Puerperal pyrexia‡	107	8	5	—	—	167	8	11	3	4
Deaths		1					—			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	1,051	84	128	12	40	1,356	51	192	22	36
Deaths	—	—	—	—	—	3	—	1	—	1
Smallpox	§3	§1	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	3	—	—	1	—	5	1	—	8	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	1,607	176	91	25	12	1,212	66	181	56	24
Deaths	8	—	—	1	1	9	—	5	—	—
Deaths (0–1 year)	382	51	47	39	12	342	40	56	46	13
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	4,588	652	570	199	130	4,465	600	621	228	115
Annual death rate (per 1,000 persons living)			12·5	12·7				14·1	14·7	
Live births	7,036	997	917	413	271	6,432	674	849	394	282
Annual rate per 1,000 persons living			18·4	26·5				17·0	25·4	
Stillbirths	247	30	28			195	14	38		
Rate per 1,000 total births (including stillborn)			30					43		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

§ Imported cases.

Letters, Notes, and Answers

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ANY QUESTIONS?

Toxicity of Mercurial Diuretics

Q.—*A patient aged 50, with weakness of the right heart, developed marked oedema of both legs. An increased dose of digitalis and an injection of 1 ml. of "neptal" were given. Several hours later he became confused, collapsed, and cyanosed, with Cheyne-Stokes respiration and a pulse rate over 100. He was in a state of semi-coma for about twenty-four hours. Treatment by digitalin, oxygen, etc., resulted in improvement. At the end of a week it was decided to administer another 1 ml. of "neptal" as it was considered improbable that it would have caused this reaction. The administration, however, was followed after a short interval by a collapse similar to that previously observed. His condition continued to deteriorate, and he died the following morning. Is such a reaction common?*

A.—"Neptal" is the hydroxy-mercury-propanolamide of *o*-carboxyphenoxyacetic acid. Acute toxic reactions and sudden death following the injection of mercurial diuretics are well known, though they are very infrequent in relation to the large quantities of these drugs which are now used in cardiac therapeutics. Up to 1942 there had been reported a total of 26 deaths from mercurial diuretics over a period of sixteen years. Death has more commonly followed administration intravenously than intramuscularly or per rectum, but of course the intravenous route is the commonest method of administration and there is no real evidence that reactions can be avoided by giving the drug intramuscularly.

Fatal accidents are probably relatively more common in patients with nephritis than in those with heart disease. Often, as in the present case, there have been reactions of some type with a previous injection of the mercurial diuretic, and these reactions should be regarded as warning signals and, as a general rule, should contraindicate further use of the drug. If mercurial diuretics must be given, then a change to another preparation is indicated. Death may nevertheless occur with the first injection, and from this it would appear that the reactions are not allergic or due to sensitization. They are the result of intolerance, or abnormal susceptibility, to the pharmacological effects of the drug.

The exact mechanism of death is probably toxic action of the mercurial diuretic on the cardiac muscle, with terminal ventricular fibrillation and syncope. In most cases death occurs within a few minutes of the injection. Where death is protracted, as in the present case, additional factors, such as digitalis-poisoning due to mobilization of the drug in the blood stream during diuresis, chloride depletion, renal impairment, and faulty excretion of the mercurial, can probably be invoked.

Eye-to-eye Ophthalmoscope

Q.—*Can you give me any information about direct-vision eye-to-eye ophthalmoscopes?*

A.—I remember seeing and using one of the direct eye-to-eye ophthalmoscopes in 1927. It was a flat, box-like structure and there was a rubber eye-cup at each end—one for the surgeon and the other for the patient. These cups were applied closely to the eyes to exclude light. The artificial illumination inside the box lit up the patient's fundus and a green cross inside the box. The patient was asked to fix the green cross. The fundus was quite well seen, but the patient found it difficult to keep the fixation steady, and so the view of the fundus was constantly changing. The same difficulty was reported by other observers. I have not seen the instrument in use since, and I believe that it is now difficult to obtain.

Male and Female Homosexuality

Q.—*Can you explain the apparent discrepancy in the legal attitude towards female as distinct from male homosexuality? The law seems to treat the latter with great severity, while completely ignoring the former. Is this actually correct, and, if so, why?*

A.—The law imposes very heavy penalties on a male who commits sodomy, and lesser but severe penalties on males who together commit grossly indecent conduct not amounting to sodomy. It is, however, not an offence for two women to indulge in homosexual behaviour together in private (if both consent and are over 16), nor is such behaviour a matrimonial offence serving as a ground for dissolution of marriage or judicial separation, as is sodomy (but not gross indecency) in a husband. An attempt was made in the House of Lords to insert a provision in Herbert's Bill (now the Matrimonial Causes Act, 1937) making homosexual conduct by a wife a ground for divorce, but the feeling of the House was so obviously against the amendment that it was withdrawn after very little discussion.

The reason for the discrepancy in the attitude of the law towards the two sexes is a matter of speculation. Sodomy is strongly prohibited by Holy Scripture and has always been a very serious offence in the eyes of the Church and the canon law. Doubtless its connexion with ordure is one reason for this emphatic condemnation, but another reason must be that it tends to diminish the reproduction of the race. The legal prohibition of grossly indecent conduct is designed for cases where the evidence of actual sodomy is not sufficient. Homosexual relations between women are not prohibited by scripture. Another possible reason for the difference is that law has been chiefly made by men, who, though conscious of the evil of male aberrations, have not felt themselves called upon to consider similar practices in women, nor even to admit their existence. (The attitude of the House of Lords to the proposed amendment of Herbert's Bill was a queerly negative one, as though the amendment dealt with a subject that had no real existence and certainly no importance.) Again, homosexual conduct between women does not offend the sense of decency so grossly as does sodomy, and leaves no physical trace. None of these suggested reasons, however, has any traditional authority.

Electrotherapy of Cerebral Thrombosis

Q.—*I recently read that hemiplegia due to cerebral thrombosis may be treated by applying a constant galvanic current to the skull over the affected side and to the cervical sympathetic on the same side, the rationale being that the constant current causes vasodilatation of the cerebral vessels. Surely stimulation of the cervical sympathetic causes vasoconstriction and section vasodilatation* (JOURNAL, 1938, **2**, 667). *Has this treatment been tested by others?*

A.—I do not know of any literature dealing with this point. The rationale of the "treatment" is far from convincing. Even if dilatation of the intracranial arteries were produced there is no certainty that the area of cerebral softening would be reduced by such a process.

Failure to Menstruate

Q.—*A girl aged 16 has so far failed to menstruate. She is apparently healthy, and her breasts and external genitalia are well formed. There is no evidence of haematocolpos or haematometra. Her mother is neurotic, and the girl shows similar tendencies. Is any treatment required?*

A.—Since the girl's general health is good, and particularly as the development of secondary sex characters is proceeding normally, no treatment is required to bring on menstruation. The premature application of hormone therapy in these cases is to be deprecated. No harm can result from waiting for at any rate another year.

Antenatal Care of Panel Patients

Q.—*Is a panel doctor entitled to charge a panel patient for antenatal examinations?*

A.—No. An insurance practitioner's terms of service require him to give "all proper and necessary medical services" of a general-practitioner character, excluding attendance at a confinement or attendance within fourteen days after labour for any condition resulting from the confinement. Antenatal treatment of a non-specialist character is regarded as being within an insurance practitioner's contract.

Smokers' Headache

Q.—*What effects and what symptoms may be produced by the sudden withdrawal of tobacco in a man, aged 37, who has been smoking an average of 30 cigarettes a day for at least twenty years? This patient consulted me for abnormal nervousness with cardiac irregularity. The radial arteries showed slight thickening, with tortuosity, but were soft and relaxed. The blood pressure was 104/60 mm. Hg. There was no cardiac enlargement and the sounds were clear, but there were frequent extrasystoles. On giving up smoking, at first he felt much better and the nervousness and extrasystoles disappeared, but within a week or two he began to complain of headaches, chiefly unilateral (left side), and giddiness on getting up in the morning. The blood pressure now varies between 130 and 140/80 mm. Hg. He attributes the headaches to the withdrawal of tobacco, since he finds relief within five minutes of smoking a cigarette, though this is associated with a return of the cardiac irregularity. Is this view correct or not?*

A.—There is fairly general agreement that tobacco raises the systolic and diastolic blood pressure and the pulse rate in most normal and diseased subjects. The blood vessels of the skin are constricted, while those of the muscles are little if at all affected. These effects occur during smoking and persist for some little time after this. Occasional cases in which smoking has produced irregularity of the heart, disappearing after giving up the habit, have been reported. It is very unlikely that the phenomena described in this patient are due to the absence of tobacco. It seems unlikely that the rise in blood pressure has been caused by the cessation of smoking, but in any case it is still well within the normal range. The occurrence of left-sided headache relieved by smoking is interesting because of the recent suggestion that migraine headache is due to dilatation of the temporal arteries, and that ergotamine tartrate relieves it by constricting these vessels. Is it possible that the headache in this instance is due to a similar mechanism? If so, digital obliteration of the temporal artery as it crosses the zygoma on the affected side should relieve the pain. One wonders how many of the phenomena occurring in this patient may be due to the psychological disturbance produced by the attempt to discard an addiction of such long standing.

Powers of M.O.H. in Notifiable Cases

Q.—*The answer to the question "What is a carrier?" (March 30, p. 512) states, "The medical officer of health has no power to coerce a carrier as he can a patient 'suffering from' a notifiable disease." What authority has a medical officer of health to coerce such a patient? The Public Health Act, 1936 (Section 169), gives a justice of the peace power to make an order to remove a patient suffering from a notifiable disease to a hospital or institution on the application of a local authority (not of the M.O.H., nor of the clerk or the chairman of the local authority), subject to all of the following conditions: (a) circumstances are such that proper precautions cannot be taken or are not being taken; (b) that serious risk of infection is involved; (c) that accommodation is available in a suitable hospital; (d) that the consent of the superintending body of the hospital has been obtained.*

A.—The above statement is correct but incomplete. Persons arriving by sea (Port Sanitary Regulations, 1933, Art. 31) or by air (Public Health (Aircraft) Regulations, 1938, Art. 16) who are suffering from an infectious disease may be removed to hospital by the M.O.H. on his own initiative. On the other hand, in the case of notifiable disease occurring in a common lodging-house the patient may be removed to hospital by the local authority without the intervention of a J.P. if the conditions stated in the question exist.

In practice, if the state of affairs is so serious under ordinary domiciliary conditions, the removal of a case is too urgent to await the decision of a local authority, which must take days and may take weeks. Every local authority should therefore give a general authorization to their town clerk and/or medical officer of health to act for the authority in an emergency of this kind, subject to a report being made on any such action taken.

Rheumatic Virus

Q.—*Are streptococci the main aetiological agents of rheumatic fever and rheumatoid arthritis? Schlesinger and Signy (Lancet, 1935, 1, 1145) reported on a virus associated with rheumatism, but van Rooyen, Green, and Sclater (communication to the Association of Physicians, 1932) were unable to find any evidence for the existence of a rheumatic virus. What is the accepted view on this problem?*

A.—The observations quoted consisted of demonstrating particles, believed to be elementary bodies or virus particles, in the deposit obtained by high-speed centrifugation of rheumatic effusions (pericardial, etc.). These were said to be agglutinated by the serum of cases of rheumatic fever. Eagles and Bradley (*Quart. J. Med.*, 1939, **8**, 173), while confirming the existence of these bodies, found that they were agglutinated by serum from cases of other forms of arthritis, even including gout. The usually accepted present view is that these bodies are of some other nature altogether; they have never been proved—by demonstrating their infectivity—to consist of living virus. There is much evidence of several kinds that rheumatic fever is a peculiar response to infection by haemolytic streptococci, and none pointing clearly to any other factor. The aetiology of "rheumatoid arthritis" is more obscure, and these remarks do not apply to it.

Flitches, Fleas, and D.D.T.

Q.—*I want to use D.D.T. on a dog. Can it be mixed in a powder with, say, zinc oxide, calamine, or starch, and, if so, in what proportions? I also want to use D.D.T. to protect bacon and hams. Is there an odourless, tasteless solvent? In what strength should it be used, and would it be dangerous to spray it direct on the flitches?*

A.—For fleas or other vermin on dogs and other animals D.D.T. can be used in the form of a 10% powder in any inert diluent (talc, kaolin, starch, etc.). There are several preparations of this type on the market with a declared D.D.T. content on the bottle.

The problem of protecting bacon and hams from the cheese skipper (*Piophila casei*) which commonly attacks them is more difficult. Since D.D.T. is to some degree poisonous when in solution in oils or fats, it should certainly not be sprayed direct on to the hams. In this connexion it may be noted that the Minister of Health said recently in Parliament that, according to present knowledge, there was little risk attaching to the use of D.D.T. in the form in which it is commonly applied—namely, as a powder or a watery suspension. Further investigations were proceeding into the toxicity of D.D.T. in oily solution. In any form D.D.T. should be kept away from food, since taken internally it was harmful.

Skin Reactions to Mepacrine

Q.—*Can you tell me anything of the aetiology, signs, and treatment of a "lichen-planus-like eruption" associated with the taking of mepacrine?*

A.—It has been recognized for some years that the taking of mepacrine provokes a variety of skin reactions in certain individuals who have an idiosyncrasy to the drug. These reactions may take the form of erythematous or eczematous—often weeping and sometimes infective—eruption, but the most distinctive reaction is that resembling lichen planus and commonly assuming a hypertrophic form. The condition may be extraordinarily widespread, involving head and face as well as any or all other parts of the body, including mucous membranes. The head and face are rarely involved in ordinary lichen planus. The condition may be of an extreme hypertrophic and warty type so that the patient looks like a tree-

trunk, but the colour and infiltration and buccal lesions suggest the diagnosis of lichen. All the hair may fall, as I have observed in some cases, and it is stated that scarring may result. Ulceration may also occur, especially about the lower legs, and itching may be marked.

While the condition is of great severity and the appearance of the patient is alarming, there is not, in those cases I have seen, any serious constitutional disturbance. The affection runs a prolonged course of several months and recovery seems to be complete, apart from the possibility of scarring previously mentioned. No specific remedies are recommended as yet, treatment being along the lines of that employed in lichen planus. I have found fractional doses of *x* rays of value in the later stages.

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Protein Synthesis

Q.—*What is the site of, and what controls, protein synthesis in the body? Is the mechanism known whereby preferential synthesis of predominantly acidic or basic proteins can be influenced?*

A.—The cells of the body synthesize the proteins peculiar to their structure and function provided there is a suitable substrate from which to build. Caseinogen is produced nowhere in Nature but in the cells of the mammary gland. The main site for the synthesis of the proteins of the blood plasma is the liver, and Whipple and his colleagues believe that most of the protein synthesis within the body goes on in this organ. The liver may produce those fundamental protein units for body nutrition and use, which are then elaborated by the cells of the body to suit their particular requirements.

The rate of synthesis of protein by the cells is dependent on their special role and on their natural response to growth and to the other requirements of the body—for example, those concerned with reproduction—and on the supply in optimal amount of those amino-acids which the body cannot synthesize. The work of Whipple and his colleagues shows that there is a dynamic equilibrium between plasma protein and cell protein, the protein flow from cell to plasma or from plasma to cell depending on prevailing conditions. Reserve stores of protein out of which the body can produce haemoglobin in anaemia due to removal of blood, or plasma protein in hypoproteinaemia, can be demonstrated in the dog. Fibrinogen is among the most labile of the plasma proteins; liver injury may reduce it and acute infection or tissue injury may raise it. Diet may also modify its level. Protein production in the anaemic and plasma-depleted dog occurs from almost any protein or mixture of essential amino-acids. Whipple and his colleagues consider that it may be found possible to influence the ratio of plasma protein to haemoglobin. They found in dogs that the amino-acids necessary for growth supply the material out of which abundant plasma protein and haemoglobin can be produced, and that the presence of methionine in the mixture tended to favour haemoglobin production, and cystine plasma protein formation.

Haemoglobin cannot apparently contribute to the body protein pool except when the red cell is broken up. Haemoglobin is then saved, supplemented, and recast into new protein, depending on the body's needs. Whipple *et al.* have shown that much of this rescued haemoglobin or globin may contribute to the building of plasma proteins. In their view, then, the circulating plasma protein is the medium of exchange between the protein pool and the haemoglobin, new plasma, or cell protein.

It is difficult to determine what the questioner has in mind with regard to the latter part of the question. The acidic and basic properties of amino-acids are dependent on the relative proportions of carboxyl groups to amino groups. Thus the basicity of proteins is conditioned by the proportion of the diamino-acids—lysine, histidine, and arginine. Lysine must be provided in the proteins of the diet, and there is evidence to suggest that the same is also probably true of histidine and arginine. The basic proteins are the protamines and histones. The nucleoproteins are formed of a phosphorized organic acid, nucleic acid with a basic protein which is usually a histone or protamine. As a whole the nucleoproteins have acidic characters although their protein component is essentially basic. Proteins of an acidic character are the phosphoproteins, which have a high content of dicarboxylic groupings.

Protamines form the bulk of the protein of the nucleoproteins of ripe sperm cells and ova. Histones are not so strongly basic as the protamines. They occur in unripe germ cells, in lymphoid tissue, and as globin, the histone of haemoglobin. The most important phosphoproteins are the caseinogen of milk and the vitellin of egg yolk. Their biological function is to provide food material for the developing embryo or the growing young. The acidic character of caseinogen is due to its content of glutamic acid. The synthesis of protamines and phosphoproteins is thus mainly located in those organs which are concerned with reproduction. The questioner will find much of interest in the following articles or books: Whipple, G. H., and Madden, S. C., *Medicine*, 1944, **23**, 215; Miller, L. L., *et al.*, *J. exp. Med.*, 1945, **81**, 405; Kay, H. D., *Nature*, 1945, **156**, 159; *Chemistry of the Proteins*, 1938, by Jordan Lloyd and A. Shore (Churchill); *Biochemistry and Morphogenesis*, 1942, by J. Needham (Cambridge University Press); *Advances in Protein Chemistry*, 1944, edited by M. L. Anson and J. T. Edsall (Academic Press, New York, vols. 1 and 2); Robscheit-Robbins, F. S., Miller, L. L., and Whipple, G. H., *J. exp. Med.*, 1943, **77**, 375; and Berg, C. P., *Ann. Rev. Biochem.*, 1944, **13**, 239.

LETTERS, NOTES, ETC.

Causation of Schizophrenia

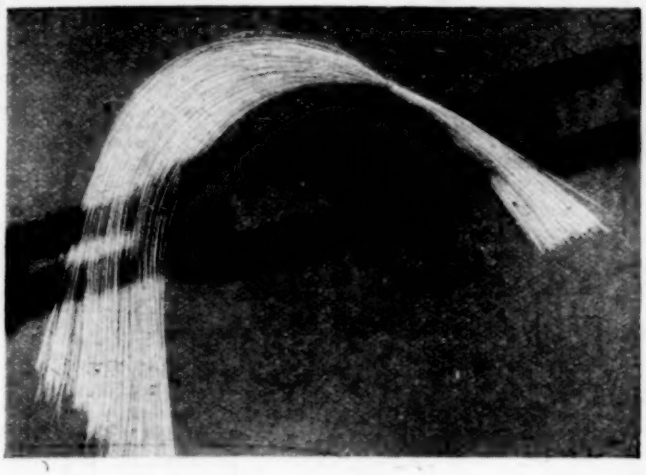
DR. W. LEES TEMPLETON (Highgate) writes: With reference to the conclusion arrived at by your correspondent (March 16, p. 419) that, since the incidence of schizophrenia does not go up in wartime, hardship and stress are *not* the factors which have a causative effect in this condition. One would like to know how the figures for the 1914–18 war were calculated, as one's own experience of such cases some years after the conclusion of the war led one to think otherwise. In a series of well-developed cases investigated in 1923 the conclusion one came to in practically all was that, had there been no stress (and in 90% of the cases this stress was directly due to the war), it was doubtful if, in spite of the hereditary "make-up" present in all but one, any of them would have broken down at all. In other words, left in their own environment their powers of adaptation to the average stresses of normal life would have been adequate. Beyond this average it was not. It will be interesting to learn in later years if the weeding-out of the so-called psychological misfits by the psychiatrists of this war has, in fact, reduced the incidence of psychosis. Industrial psychologists with a long pre-war experience have cast some doubt on the value of many of the tests of the Army "trick cyclists." One hopes that there will be a thorough check up on the cases of psychoses of the next few years with their Army medical history, so that the value of a psychological pre-enlistment investigation may be calculated. After all we are likely to have a large peacetime Army, apart from the value of the findings in the sphere of industrial psychology.

Acute Pancreatitis

DR. EVA MCCALL writes: Mr. Norman Godfrey's article (Feb. 9, p. 203) recalls a case which was under my care in a military hospital during the first world war. The patient was sent to us from an auxiliary hospital in the neighbourhood with the diagnosis "gastritis." When I saw him he was apparently quite comfortable and I could detect nothing abnormal in the abdomen. After a week in bed on light diet and gastric sedatives he was allowed up on ordinary diet, and as the hospital was a clearing station it was decided to transfer him to another hospital in a neighbouring county where beds were less urgently needed. He was passed fit to travel by the orderly officer, but by the irony of fate he was seized with acute pain *en route* and died before reaching his destination. The necropsy revealed haemorrhagic pancreatitis. At this distance of time it is difficult to recall all the circumstances of the case in detail, but I always blame myself for having failed to make the correct diagnosis and for allowing an abdominal patient to undertake a railway journey.

Proctalgia

"A MEDICAL WOMAN" writes: I have read with interest the various letters which have recently appeared in the *Journal* describing attacks of pain in reference to the rectal area. It was stated by the writers, who are all men, that they had never come across a case in a female. It may therefore be of interest to state that I myself am a victim and frequently suffer from attacks which correspond in every point with those described. My mother also had similar attacks, and so does a female cousin on my mother's side of the family.



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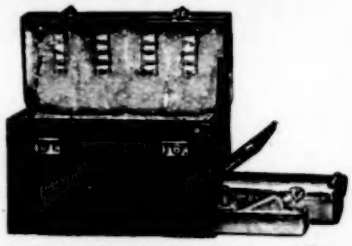

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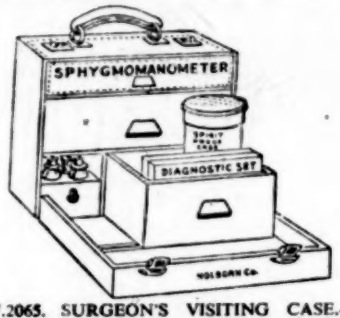

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★ *The second of a series of advertisements written specially to correct various misconceptions and to explain how and why* Milton *differs from all other hypochlorite antiseptics.*

MILTON the stable brand of electrolytic sodium hypochlorite, standard strength (1%) and low alkalinity

NOVUTOX

Self-Sterilising

LOCAL ANÆSTHETIC

½%, 1% & 2% SOLUTIONS

FOR

MINOR & MAJOR SURGERY

Absolutely non-toxic in therapeutic doses and tolerated by even the most sensitive tissues, Novutox has the added advantage that it possesses a remarkable chemo-therapeutic action which promotes very rapid and clean healing of wounds.

Available in:

½%, 1% *and* 2% *Solutions:* - - - ***BOTTLES*** *of* 2 ozs. *and* 20 ozs.
1% *and* 2% *Solutions:* ***AMPOULES*** 2 c.c. *Boxes of* 12 *and* 100.
CARTRIDGES *of* 2% *Solution are available in boxes of* 20 *and* 100.

Each c.c. of Novutox 2% contains 0.02 gm. ethocaine hcl., 0.00002 gm. epinephrine and 0.00002 gm. capryl hydrocupreinotoxin hcl. Other strengths of Novutox contain these elements (with or without epinephrine) in varying proportions.

PHARMACEUTICAL MANUFACTURING Co. Ltd.
THE LABORATORIES, CHELTENHAM, GLOS.

Improved *Pregnavite* formula

Increasing knowledge of the special requirements of pregnancy and lactation in relation to modern diets has indicated the desirability of additions to the already successful Pregnavite formula. These consist of

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Pregnavite has been specially designed to provide the vitamins and mineral salts which are most commonly lacking from the diet of the pregnant woman and in those quantities found by dietary surveys[1] and by experience to be best for the purpose.

[1]. *Food, Health and Income, Macmillan, 1936.*

Under the new formula the recommended daily dose provides:—

Vitamin A 4,000 i.u.	Vitamin D 300 i.u.	Iron 68 mg.	
Vitamin B 200 i.u.	Vitamin E (a-tocopherol) 1.0 mg.	Manganese, Iodine, Copper	3 p.p.m.
Nicotinamide 25.0 mg.			
Vitamin C 400 i.u.	Calcium 160 mg.		

Pregnavite

The comprehensive dietary supplement for pregnancy.

Further particulars from Vitamins Ltd. (Dept. BPY), 23, Upper Mall, London, W.6.

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★Every carton of LIL-LETS carries a warning that no tampon is suitable for all women, and that tampons should not be used by unmarried women or young girls unless recommended by a doctor. An uncompressed specimen, together with one dozen of the finished product and a fully descriptive leaflet, will be sent on receipt of professional card.

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